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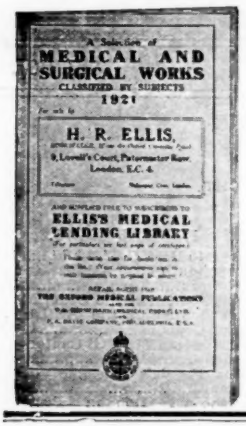

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LECTURE IV.[1]

IN the preceding lectures I have endeavoured to give some account of the objective features of the fundamental mechanisms of cerebral activity. I propose in this concluding lecture to indicate in what fashion objective psychology may be applied to the study of the neuroses. We have seen that the mechanisms of cerebral activity are fundamentally of two characters. In the first ploce the discriminatory cortical activity finds its expression in the movements of the voluntary nervous system—that is, in actual muscular movement and in the kinæsthetic representation of such movements in the motor cells of the cortex. In the second place the general reactions of the organism to stimuli that tend to destroy or impede functional activity find their expression in the movements of the thalamic system and effector organs. Since the nervous system is an instrument of movement, and nothing else, we should be prepared to find that a certain group of the functional disturbances that we term neuroses would be the expression of some chemico-physical changes affecting movement of the neurones generally. Our knowledge of the chemico-physical processes that constitute activity of the neurones is as yet too incomplete to furnish a secure basis for a descriptive pathology.

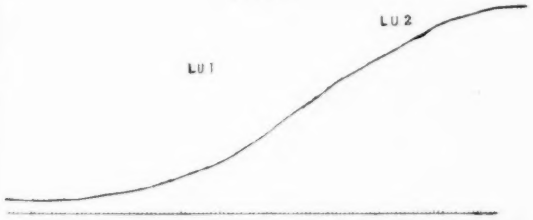
THE FUTURE TASK OF NEUROLOGY.

At present we rely chiefly on deductions from the similarity to certain aspects of neurosis in the behaviour of the organism when functional activity is disturbed by toxic substances, whether ingested or manufactured, in the body. The study of these physico-chemical disturbances will be the great task of the neurology of the future. The researches of Sir Frederick Mott and his pupils have broken new ground in the elucidation of the micro-chemical signs of disturbances of the function of the neurones, whilst the work of Pighini has opened the path for chemical investigation through the study of metabolic disturbances. The policy of the London County Council in giving effect to the scheme endowed by the late Dr. Maudsley in founding a school and hospital for the study of the earliest stages of nervous disturbances is justifying itself by the additions now being made to our knowledge of the chemical and physical changes that express disordered function of the neurones. The work of Koch and Sydney Mann performed in the L.C.C. laboratory suggests that the general bodily deficiency of oxidation activity demonstrated in dementia præcox is the interpretation of the micro-chemical changes shown by Mott to be characteristic of the nerve cells in this disorder. Just as such an advance in our knowledge of the physical basis of this form of insanity must once and for all dispose of the theories of its psychogenic origin such as that advanced by Jung, so we may hope that by similar methods the physical basis of the asthenic forms of neuroses may be established.

There is, indeed, a certain body of physiological evidence in favour of the view suggested by the micro-chemical methods of Mott and his pupils, that the processes of nervous activity are of the nature of a catalytic phenomenon. Brailsford Robertson repeated an earlier observation by Loeb and Koryanyi on the determination of the curve of the velocity with which a simple movement of drawing a straight line of indeterminate length is performed. Robertson ruled straight lines with a form of apparatus allowing the construction of a curve of the velocity with which his pencil travelled at any moment of the drawing. The pencil, which was in reality a metal stylus connected with one arm of the circuit of a battery activating a Deprez signal, travelled across a number of longitudinally arranged alternating slips of ebonite and copper. The copper slips were each connected with the other arm of the signal circuit. When the stylus travelled over one of the copper slips the circuit was closed and the signal made a mark on the smoked paper of a drum rotating at uniform speed. Since the copper slips were equidistant it is obvious that by measuring the distances between the signal marks on the drum it was possible to ascertain the velocity with which the stylus moved at any point of its journey. These data furnished a curve of the velocity which showed the following characteristics: The velocity underwent progressive acceleration; beginning slowly, the velocity of the stylus reached a maximum and then again diminished, so that the commencement and termination of every curve was asymptotic.

In order to verify the conclusions of Robertson I arranged an endless band of linen revolving with constant velocity round two drums set horizontally at a distance of about two feet apart. The band of linen was a yard in width. Midway between the two drums it passed over a third roller. The apparatus was covered by a board except for a gap about 2 inches wide just over the middle roller. A line of arbitrary length was ruled with a pencil along one edge of the gap and the quickly moving band did not allow the curve traced to be followed by the eye. No attempt was made to determine voluntarily either the velocity with which the line was drawn, or its length, so long as it was within the limits of the band. Lines were drawn both towards and away from the body, using movements of the whole arm, elbow-joint, or wrist in order to eliminate the possible influence of the type of movement employed on the form of the curve. When the band was removed the resulting curves in every case agreed with that constructed by Robertson (Fig. 1). Now Robertson has shown that

FIG. 1.



Curve traced by drawing a straight line across a rapidly-moving linen band. Time below in 1/100 second.

such a curve is typical of an autocatalytic process—that is, a chemical process of such a nature that it is catalysed by one of the products of reaction; in such a case the commencement and termination of the velocity curve is asymptotic.

Examples in chemistry of such autocatalytic reactions, in which one or more of the products of reaction accelerate their progress, are furnished by the hydration of methyl acetate or the hydrolysis of cane sugar at 100°. In such a reaction a point must be reached when the decrease in the active mass of the reacting substance balances the increase of the active mass of the catalyser. A catenary reaction is the only other type of reaction that will show a similar acceleration, but the autocatalytic reaction is distinguished

[1] Lectures I., II., and III. appeared in THE LANCET of July 16th and 30th and August 6th, respectively.

by the fact that its curve is symmetrical. The integrated equation for such a curve will be—

$$\text{Log}\ \frac{x}{A-x} = K\,(t-t')\,;$$

where A expresses the total transformation at completion of the process, K is a constant expressing the velocity of the process, and t' is the time at which the mass of the product equals ½ A.

CORRELATION OF CATALYTIC REACTION WITH DEFECTIVE OXIDATION IN NERVE CELLS.

Now the importance of this observation lies in the evidence that it affords that the neural process conditioning the movement is in the nature of a catalytic reaction. The researches of Mott have shown that the nervous asthenia of extreme forms of myxœdema and of dementia præcox are associated with evidences of defective oxidation processes in the nerve cells, and the correlation of the two observations affords an alluring hypothesis. The casual drawing of a straight line affords a very good example of a cortical mechanism, unchained in response to an autogenous voluntary stimulus, which runs its course without further interference. We may look to observations of disturbances of the catalytic process such as those furnished by Koch and Mann in dementia præcox to afford an insight into the asthenic types of neurosis. The slide shows the rapid exhaustion of a patient who suffered from lack of power of concentration and a distressing sense of mental fatigue when he was set to obtain a record with the Mosso ergograph. That the fatigue was not peripheral was shown by the absence of signs of muscular fatigue in response to electrical stimulation before and after the ergographic tracing. By correlating my method for the estimation of the effort tonus reflex, described in the first lecture, with observations on the squeeze exerted on a dynamometer I have noted that in such patients the bodily response of effort dies down rapidly, and simultaneously with the maintenance of the squeeze. The effort is, however, there, and this serves to differentiate this class of patients from those that we shall consider later under the category of hysterical weakness. It is in the treatment of these asthenic patients that so much harm is wrought by attempts to stimulate them to greater efficiency without first restoring their bodily condition.

NECESSITY OF CONSTITUTIONAL TREATMENT OF ASTHENIC PATIENTS.

All neurologists of experience are convinced of the great efficacy of constitutional treatment which is too often ignored by the new school of psychotherapy. I will now turn to consider those neuroses in which the predominating symptoms are manifested objectively and subjectively as an excessive response on the part of the mechanism that we have studied as the bodily reaction to nocuous stimuli. I have endeavoured to show that the bodily response to nocuous stimuli is essentially one of activity, and that the benign or agreeable stimuli are responded to by quiescence; and, furthermore, that the activity which we occasionally ascribe to the action of agreeable stimuli is really the response to those conditions of the environment that hinder their enjoyment. The time at my disposal would not allow me to attempt to consider in detail the various forms in which such a hyperexcitability of the mechanism of affection may show itself.

In the previous lecture I spoke of the caution with which we must view all attempts to attribute activity of the vegetative nervous system to the direct action of the internal secretions; it is much more promising to seek for evidence of modifications of the excitability of the autonomic mechanism as a result of long-standing hyper- or hypo-function of the endocrine system. The relations between excitability of the autonomic system and glandular activity have been more extensively studied in the case of the thyroid than in that of any other gland; I will not dwell on the well-known symptoms of hyperthyroidism; there are, however, a certain number of cases of neurosis exhibiting a hyperexcitability of the affective mechanism together with tachycardia, vasomotor disturbances, and tremor without any thyroid enlargement. There are three signs revealed by the objective examination of such cases on which I lay great stress. First, the hyperexcitability of the mechanism of affection as revealed by a study of the galvanic reflex; in these cases the skin resistance is invariably very low. This sign, though never absent in indubitable cases of hyperthyroidism, can, of course, taken alone, only amount to an objective demonstration of the hyperexcitability of the affective mechanism. The isolation of thyroxin, the active principle of the thyroid internal secretion, has permitted the quantitative estimation of the influence of the thyroid on metabolic activity. Since in cases of indubitable hyperthyroidism we invariably find the basal metabolism to be above the normal rate we cannot diagnose its presence in the absence of this sign. The determination of the rate of basal metabolism is a procedure of no great difficulty, which can be accomplished in a very short time with fairly simple apparatus. It is to be hoped that this valuable method will soon become an established procedure in the investigation of cases of neurosis. There is, however, a third sign of the existence of the condition of hyperthyroidism which is likely to prove of great value. Goetsch has devised an intradermic test that serves to demonstrate the existence of hyperexcitability of the sympathetic system. The reaction depends on the demonstration of sympathetic hyperexcitability by injection into the superficial layers of the epidermis of minute quantities of adrenalin. The test shows no more than that the sympathetic system is hyperexcitable, and furthermore it only demonstrates a hyperexcitability at the junction between the sympathetic neurone and the effector cell. It cannot, therefore, be held to be of absolute diagnostic import, any more than the exaltation of the galvanic reflex. Its importance lies in the fact that it is apparently never absent in cases of hyperthyroidism, and taken with the two preceding tests it will establish the diagnosis. As modified by Ascoli and Faggioli, the test is described thus: When 0·05 c.cm. of a 1 per 1000 solution of adrenalin is injected by a fine hypodermic needle, pushed just under the epidermis, so that its whole intradermic course is clearly visible through the skin, the resultant swelling assumes after a few minutes a dark-blue colour as if ink had been injected. The swelling then becomes surrounded by an alabaster-like halo which grows in intensity and extent, often sending out irregular shoots in one or more directions. Around the white halo appears in turn a red halo, more or less intense in colour and width. Frequently a contraction of the pilomotor muscles occurs, giving an appearance like goose flesh to the alabaster zone. This is fairly well shown by the photograph (Fig. 2). The area of goose flesh in my photograph is not, however, limited to the alabaster zone. Having reached its maximal development in half an hour, after a stationary period of an hour or so, the reaction gradually disappears, the blue spot changing to red, and leaving ultimately a small swollen papule. By using a more dilute solution, for instance, one in two hundred thousand to one in a million, the reaction is less intense but always preserves the same type. It differs, however, by the absence of the central blue spot for which a small red mark is generally substituted later on, and the red halo is not always prominent. The excitability of the subepidermal test in ordinary circumstances lies between dilutions of one in two hundred thousand and one in a million (Parke Davis phials). In some cases of disturbances of the menopause, of arterial hypertension, of Graves's disease, and sometimes in pregnancy, the excitability is increased, giving positive results with further dilutions up to one in five to twenty millions. It should be always compared with a control injection of distilled water, as some people react in a somewhat similar fashion to the water injection.

Using this technique in preference to that of Goetsch I have obtained positive results in all those of my cases exhibiting indubitable symptoms of hyperthyroidism with hyperemotionalism, and in some dozen cases occurring at the climacteric in which flushing, giddiness, and nervous tremors were complained of, and which showed an excessive galvanic reaction. So far the evidence seems to be clear that hyperactivity of the mechanism of affection is associated with the frequent occurrence of hyperactivity of the thyroid. That thyroidism is not the only cause is certain; we find such hyperexcitability associated with other bodily states, in diabetes, at puberty, at the climacteric; it can be produced artificially by many drugs such as adrenalin. That hyperthyroidism can be conditioned by the environment is certain; cases occurred during the war in which pronounced symptoms of Graves's disease were noted within a few days of exposure to the strain of action; but I have already sufficiently emphasised in my first lecture that considering the multitudes subjected to like conditions we cannot but come to the conclusion that the very small number of men affected had a pre-existing abnormality of the thyroid function. There is good reason to believe that a long-continued excitation of the affective mechanism may lead to a temporary hypertrophy of the thyroid activity; this fact was demonstrated by French observers in the civilian population of bombarded towns, but where there is no pre-existing state of organic instability such states are not lasting. The implantation experiments of Steinach have demonstrated that excitability of the affective mechanism subserving sexual activity may be directly influenced by the internal secretions of the gonads.

FIG. 2.

Intradermic test for sympathetic hyperexcitability, showing the needle track and an appearance like goose flesh in the alabaster zone.

PROBLEM OF RELATIONSHIP OF INTERNAL SECRETIONS TO NERVOUS MECHANISMS.

Our knowledge of the relationship of other internal secretions to nervous mechanisms is as yet too scanty for discussion; such secretory activity may well be the determining factor in unloosing innate types of nervous mechanism or instincts—e.g., the unchaining of the dormant maternal instincts in the capon. Some of the wildest imaginings of the novelist may, indeed, have a basis in physiological fact. It is by no means inconceivable that latent innate reflex patterns may occasionally be aroused without any form of suggestion by knowledge or example on exposing the individual to the appropriate environmental stimulus; examples are not wanting in the study of animal behaviour. The mention of these abnormalities of instinctive behaviour leads us to the consideration of another type of neuroses, in which the distinguishing feature is some line of conduct, which is at entire variance with the demands of the environment and which we can recognise to be related to the affective symptoms that are aroused by any interference with it. We have already seen that it is hopeless to seek in such conditions for associations between the primitive innate mechanism and conscious discriminatory processes. These types of instinctive behaviour may occasionally have been re-awakened by the environment, or they may owe their appearance to certain structural abnormalities which constituted the primary stimulus at a period when the innate mechanism was not at variance with the more primitive conditions under which the ancestral stock lived. It is only the manifestation of primitive instincts that are ill-adapted to the environment which is of importance to neurological medicine. Similar in their manifestations to the instincts, and yet so different in their origin, are the conditioned reflex patterns or habits. Both types have, as we have seen, this in common, that interference with their free activity is responded to by the nervous system in the same fashion in which it responds to a nocuous stimulus which tends to injure or impede the normal course of vital activity. The resultant powerful bodily reaction with its disagreeable affect may on frequent repetition condition a new defensive habit mechanism of which certain writers who prefer the terminology of dynamic symbolism speak of as repression by a censor whose habitat is the unconscious. In normal people, whose mechanism of affective reaction is not hypertrophied, such unfitting instinct and habit mechanisms will cause but little disturbance. In those whose affective mechanism is hyperexcitable the disturbance produced may be so profound as to affect every manifestation of conduct. What is in some men an excentricity constitutes in others a neurosis.

PROBLEM OF STIMULI ORIGINATING HABITS.

Now though to endeavour to discover what are the primary psychical correlatives of an instinct mechanism is to attempt the impossible, to determine the form of stimulus that originally conditioned a habit is a more hopeful task; by doing so we may be able to introduce the links of the habit mechanism to other and more rational associations and so to disintegrate its power. It is this task that is attempted by those who try to arrive at the original condition by the analytic method. I do not propose to discuss the utility of the psycho-analytic method. That it has given much valuable information in the realm of psychology is beyond question; whether its application in the field of medicine has yielded advantages outweighing its manifest drawbacks is a question about which there is much difference of opinion. An attempt to discover the associations presumably existing between different processes of cerebral activity and a particular disordered mechanism by learning from the patient what he can tell of the associations which are most readily evoked by an appropriate verbal stimulus is of course a perfectly legitimate objective method, but in an attempt to base our study of neurosis on purely objective investigations we are bound to scrutinise very carefully the validity of the means which we adopt.

DIFFICULTIES OF INQUIRY BY METHOD OF ASSOCIATION.

There are several factors involved in an inquiry conducted by the method of association that must prove to be very grave difficulties in the path of anyone seeking to conduct investigations in the spirit of objective science. These difficulties are probably quite well realised by the many acute intellects that have busied themselves with the analytic method, but to

recognise a difficulty is not always to be able to avoid it. The chief source of error in such investigations must always be the possibility that the subject derives his associations not from endogenous sources but from the investigator. The most casual perusal of the literature of psycho-analysis must convince any unprejudiced observer of the reality of this difficulty. We find that different investigators tend to discover widely different mechanisms of thought as lying at the root of the neurosis. The universality of the sexual basis so vehemently asserted by partisans is strenuously denied by other investigators, who themselves propound mechanisms that are not admitted universally. On any theory all these observers cannot be right, and in physical science, if we found that honest experimenters obtained consistently different results with a certain method we should not hesitate to impugn the validity of the method. A form of inquiry which involves the exclusive concentration of the mental activity of the subject on the performance of a task set to him by the observer renders him particularly sensitive to any form of stimulus that he may receive from the observer. We have seen in the preceding lectures that the expression of mental activity is far from confined to vocalisation. Movements of every variety are involved; the more obvious movements to an observer have in point of fact not been dwelt upon, that is, such movements as are evidenced by facial expression, eye movements, and the play of the pupils, for the sole reason that though obvious to the eye they present overwhelming difficulties to instrumental registration. An example from the animal world may illustrate the part that such movements play in communicating our approval or disapproval.

THE THINKING HORSES OF EBERFELD.

I know of no better example of the perils that beset this form of investigation than the story of the "thinking horses" of Eberfeld. A Prussian schoolmaster, Herr Krall, succeeded in educating horses so that they would indicate the sum or product of numbers written on the blackboard by stamping the hoof the proper number of times. Later on they acquired the power of doing divisions and extracting cube roots. They were investigated by most of the eminent psychologists of Germany and many were the papers written about their feats. The bona-fides of their master were undoubted and they would perform equally well in his absence. As time went on these animals developed superhuman powers: they would not only solve the difficult problems of the blackboard, but they would guess correctly and stamp out the number of which the observer was thinking. At this stage they were investigated by Stumpf; he confirmed their marvellous powers of guessing the numbers thought of, and then proceeded to test their ability when blindfolded. The horse did everything it could to see the observer from under the bandage; when it succeeded in doing so the answer was right, but when the blindfold was effective it was generally wrong. That solved the mystery; Stumpf found that, in common with every observer, when the number that he had thought of was stamped out he made a little involuntary gesture of assent which the quick eyes of the horse noted. I have often repeated the same experiment, taking the part of the horse myself, and so long as the subject is innocent of the method employed I have seldom failed. To an experimenter conducting an analytic examination no stimulus word can be totally without affective import, be it the expectancy of a result or the recognition of its futility.

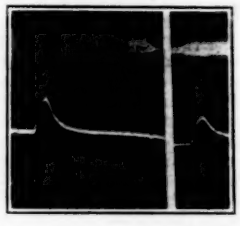
RESPONSIVENESS OF THE SUBJECT OF INQUIRY.

The subject is dissociated from all other stimuli than those communicated by the observer. He is warned to respond without self-criticism or hesitation. If with a casual fixation of attention it is easy to repeat the experiment of the Eberfeld horse under the conditions of a psycho-analytical investigation there must be many signs such as the inflexions of the voice and the play of the features, that it is impossible to control. In such a responsive attitude on the part of the subject wilful deception of course plays no part. Evidence of the extent to which the responsiveness of the subject can be raised under appropriate conditions can be found in the Proceedings of the Society for Psychical Research. Whatever be the eschatological value of these documents they certainly contain a mine of information to the student of abnormal psychology. The alertness with which almost imperceptible hints are adopted, the amazing accuracy with which the observer's mind is interpreted by perfectly honest subjects who have placed themselves as purely receptive instruments in the hands of the observer whilst under the belief that they are giving utterance to the thoughts possessing their brain, must give pause to anyone who notes the conditions under which analysis is carried on. Even when suggestion is discounted it is impossible to ignore the part played by the analyst in the interpretation of the results. I have sufficiently dealt in a previous lecture with the incommunicable uniqueness of states of feeling. It is for these and similar reasons that, in so far as it has appeared to be desirable to inquire into the associations connected with any particular phase of conduct, I have confined myself to a very superficial examination that readily permits of an objective control. The patient is allowed to tell his history without interruption or question whilst a continuous record of his skin resistance to a constant current is photographically recorded on a roll of bromide paper. The observer sits behind him, and the main headings of his discourse are taken down on a sheet of paper ruled so as to allow the time at which any statement was made to be compared with the timed record of his resistance. I have made many such records and they form curious psychological documents.

INCONSTANT REACTION OF THE VEGETATIVE SYSTEM.

It is by no means those statements to which the patient appears to attach most importance that furnish evidence of an affective response; obvious attempts to achieve pathos may leave the galvanometer unmoved, whilst the narration of some less prominent incidents which reveal the general orientation of the patient's attitude will evoke a well-marked galvanic reflex. Even with such precautions the results obtained must be interpreted with considerable caution. Sherrington and Grünbaum have shown that stimulation of a cortical area after an interval by no means invariably evokes the same form of response, and we may interpret this as a physiological demonstration of the fact that our reaction at any given time to a stimulus is determined to a great extent as to its form by the particular equilibrium in which the stimulus finds the nervous system. Still more so is this true of the mechanism of the affective response. The vegetative nervous system does not always react in the same fashion to the same type and intensity of stimulus. I was able in conjunction with Symes to furnish an experimental demonstration of this fact in connexion with the sympathetic innervation of the bronchial muscles. When the neuro-muscular junction of the sympathetic nerve-supply to the bronchiolar muscles is stimulated by the same dose of adrenalin a precisely opposite type of response may be elicited, according to the condition in which the stimulus finds the bronchiolar mechanism. If the bronchioles be constricted the stimulus will cause dilation: on the contrary, when the bronchioles are dilated sympathetic stimulation will cause constriction (Fig. 3). A very little

FIG. 3.



Antagonistic action of adrenalin on bronchioles. Firstly, when dilated; secondly, when constricted.

observation of our own feelings reveals a similar process. A stimulus that has evoked a pleasurable feeling may on repetition prove disagreeable, and vice versa: "Nessun maggior dolore che ricordasi dei tempi felici nella miseria." It by no means follows that a stimulus evoking a galvanic response indicating its "nocuous" nature always did so. As a method of therapeutics the attempt to disintegrate the aberrant mechanism by the introduction of fresh associations, if the contention as to the organic disturbance underlying the neuroses be correct, can only claim to be a form of symptomatic treatment. In the absence of efficient radical treatment symptomatic treatment is justified, so long as it is not mistaken for a process of radical cure. It is as symptomatic treatment that the methods of psychotherapy must justify themselves, and there can be no greater disservice rendered to its claims than the talk of "cures" evidenced by the sublimation or removal of certain symptoms of a particular neurosis.

HYSTERIA.

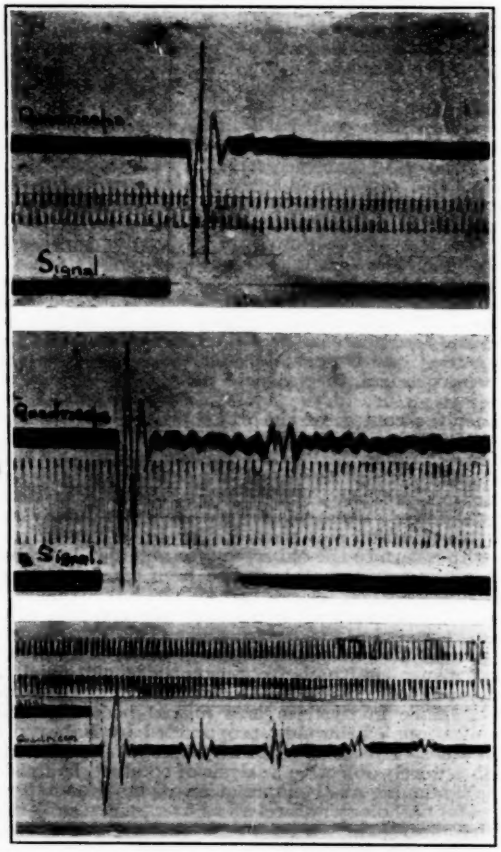
So far I have dealt with the fundamental characters of neurosis in which the physical disturbance is manifested by a hyperactivity of the mechanism of affection. I will now turn to a type of neurosis in which I have reason to think that the fundamental disorder is an impairment of the activity of the mechanism of affection; the forms of neurosis that fall under this definition are those designated as hysterical or pithiatic. The conception of the nature of hysteria has undergone a radical change in recent years. The supposed stigmata that seemed to constitute the neurosis an organic disease have been discarded one by one. Under the ægis of Babinski we have learnt to eliminate all symptoms from the clinical picture of the neurosis that are not entirely under the control of the will, until we have reached a point when our knowledge of hysteria may be summed up in Babinski's famous dictum—"Entre l'hystérie et la fraude il n'y a qu'une difference d'ordre morale." Hysteria, then, can only be distinguished from conscious simulation by a purely subjective criterion; it may appear to be a retrograde step to return to the old search for organic disturbance after our symptomatology has been carefully purged of the so-called stigmata, which have one after another been shown to be simply the response of the patient to auto- and hetero-suggestion. If, however, the view that a neurosis is the expression of an organic disturbance is to be consistently maintained, an attempt to demonstrate the existence of signs of such disturbance in hysteria is a logical necessity. The implications of the view propounded by Babinski do not seem to have been clearly recognised. Starting with a purely objective analysis of conduct, he finishes by abandoning all attempts at an explanation in terms of neuropathology and refers us to a purely subjective standpoint. Any attempt to understand hysteria must be founded on some knowledge of the general orientation of the behaviour of the hysteric before his conduct brings him into contact with the physician. Such knowledge is rarely directly available to the specialist; it may more often be gleaned from information supplied by the family doctor or by intelligent relatives. The picture obtained from these sources is that of an egocentric individual without strong or durable emotions, though very anxious to impress the outer world with the gravity and intensity of his experiences. Always more ready than a well-bred person should be to impress his fellows, he will not willingly apply himself to any task involving strenuous exertion, fatigue, or danger. The total personality conveys an impression of flimsiness. He appears to be a very different person to the volcano of ill-suppressed sexual passions that some writers on psychotherapy have portrayed. The symptoms of hysteria convey to the observer a certain general impression of what can be called theatricality—though possibly the stage ill deserves such a comparison. The necessity under which the cinematograph actor finds himself of conveying his mental states to the audience by emphasising all the mechanisms of expression has much in common with the conduct of the hysteric. Such vague impressions might lead us to look for indications of enfeeblement of the mechanism of affection which reinforces and protects the general tendencies of normal conduct. In 1918 I had the opportunity of examining all the cases of neurosis that passed through the Maudsley Neurological Clearing Hospital, which at that time had over six hundred beds. I found that the large class of patients exhibiting those motor and physical symptoms which constitute the hysterical syndrome could be readily differentiated from other types of neurosis by the extraordinary depression of the galvanic response to any form of stimulus. Such patients would start or tremble at a loud noise or painful stimulus, when a normal man would hardly budge, but the galvanic response would be either absent or less than normal. Though they might talk of great emotional perturbation there was no corresponding galvanic reflex. The *mise en scène* of the galvanometer room seemed to be extremely conducive to the exhibition of hysterical crises, and I had the opportunity of observing the galvanic reflex during many such scenes. One young soldier suffering from a hysterical contracture of the foot broke down during an examination; tears rolled down his cheeks, he addressed his dead brother in language savouring of a South London melodrama, he asked why he himself had not been killed in his brother's place so that the favourite son might have been left to comfort his poor old father, and all the time whilst he wailed and wept the spot of light from the galvanometer mirror remained steady. In my second lecture I pointed out that in the recitation of dramatic poetry the counterfeiting of rage or grief, no matter how dramatically performed, is unaccompanied by the electrical signs of activity of the affective mechanism. In these observations we have, I think, the key to hysterical behaviour. It is purely imitative. I published these results in a very condensed form at the meeting of the British Medical Association in the autumn of 1918, and since then have seen no reason to modify the conclusions that I then formulated. I not only found that the response to the alleged emotional states is absent but that the hysteric reacts subnormally to all forms of adequate, that is nocuous, stimuli. We are therefore entitled to assume that the activity of his mechanism of affection is subnormal. In the second lecture I demonstrated that a study of the time relations of the galvanic and other forms of response to nocuous stimuli shows that the stimulus is recognised and elicits an appropriate cerebral response an appreciable time before the bodily mechanism of affection reacts. We have, in fact, a kind of dualism—on the one hand the discriminatory mechanism associated with intelligent behaviour, and on the other the reaction of the organism as a whole to a nocuous stimulus. Herein lies the explanation of hysterical conduct. The hysteric is as capable as a normal man of recognising that the situation in which he finds himself is one of potential peril or discomfort, he can respond immediately to the situation by an appropriate cortical reaction; but if the stimulus be continued his activity lacks the reinforcement supplied by bodily reaction. To determine his line of conduct a representation of the situation is necessary, and such a representation must normally involve the activity of the mechanism of affection, since in no other way can the unpleasantness of the situation which reinforces the intellectual appreciation of its danger be recognised. Deprived of this determining force his reaction to the situation will be at the mercy of any casual stimulus. We have had objective evidence that the affective reaction fails him; he has then recourse to other forms of expression more or less distantly associated with the feeling of unpleasantness. The association of bodily ailments with the feeling of distress will most readily furnish the mechanism by which the patient endeavours to represent to himself and to symbolise to the external world the fact that his activities are impeded or threatened by some nocuous influence in the environment. Hence the hysterical symptoms really

constitute a method of expression primarily for egoistic and secondarily for social needs which has been conditioned by an organic disability of the mechanism of affection. Another cardinal symptom of the hysteric is referable to the same organic disability. All writers on hysteria have emphasised the abnormal suggestibility of the hysterical subject. Suggestibility has been defined by McDougall as a process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance.

The destructive criticism of logic by the pragmatists has taught us one thing—that is, that no judgment is without its affective side, a truth which, though by no means new, since it is implicit in the revolt against formal logic which began in the psychological studies of Fries and Herbart, is still occasionally forgotten. Our strongest bond with reality is that of the feelings which constitute our strongest defence against the irrational. Mind dissociated from feeling is mind very much at the mercy of any suggestion. It is the bodily reaction against a suggestion that is in discord with the general tendencies of our activity that is the real guarantee against its acceptance. It is just this defence that the hysteric lacks; to a greater or less extent his activities can be unduly influenced both by autogeneous and heterogeneous suggestions. In other words, the innate and habitual pattern reflexes, having lost the mechanism of bodily reaction by which they reply to stimuli tending to interfere with their activities, are no longer the potent protective system that they constitute for the normal man and can be displaced or dissociated by any new stimulus of sufficient potency. Great as has been the work of Babinski and his school in demonstrating the mimetic nature of hysterical symptoms, it has been needlessly impaired by the criterion that they have adopted of what constitutes a hysterical symptom. Limited by the subjectivism that defines hysteria as only differing from fraud in its moral aspect, they decline to consider as hysterical any symptom that cannot be produced by an effort of will. This is a return to the subjective method par excellence. Of will and its limitations we have no objective knowledge, and as Spinoza once said: "No one has yet learned from experience what the body regarded merely as a body is able to do in accordance with its own natural laws, or what it cannot do. For no one knows enough about the constitution of the body to examine all its functions."

The study that we have just made of the movements manifested during cerebral activity has revealed a series of motor, circulatory, and glandular reactions, which, though not capable of being directly influenced by volition, are in their totality the expressions of volitional effort. Owing to his dissociation from states of feeling the hysteric appears to readily assume that state of muscular hypertonicity which we have observed as an accompaniment of concentrated effort, and the reflex response to certain stimuli is in consequence greatly exalted. The response to auditory stimuli frequently takes the form of an exaggeration of the normal "start." I have pointed out that the latent period of the start in man is extremely short, not much longer than the 0·05 second found by Sherrington in the decerebrate animal and the exaggerated start of the hysteric, having the same latent period as that of a normal man, a voluntary origin must therefore be ruled out. Even more striking is the exaggeration of the knee-jerks. The response may not only be increased but followed by a series of irregular clonic contractions—which may, however, be readily differentiated from the true quadriceps clonus of a lesion of the pyramidal tract when recorded by the oscillograph or the string galvanometer (Figs. 4). As Wertheim Salomonson has pointed out, the electromyogram of the true clonus points to an origin different from that of the spurious hysterical clonus. None of these phenomena are directly referable to voluntary activity, but they are consistent with the supposition that the patient is in the same state of muscular hypertension as a normal person whose whole organism is concentrated on a particular voluntary effort. I have occasionally succeeded in obtaining myograms exhibiting a similar functional clonus from normal subjects concentrating all their attention on squeezing the dynamometer. It is generally accepted that when a case of hysteria is characterised by some paralytic or motor symptom which simulates the effects of a definite organic disturbance it is always possible to differentiate between the hysterical symptom and the organic one by the fact that such subsidiary mechanisms as would be certainly affected in organic lesions are not affected

FIG. 4.



Electromyograms taken with Bock-Thoma oscillograph.
A, Normal knee-jerk. B, Hysterical knee-jerk, with functional patellar clonus. C, Knee-jerk, with patellar clonus in spastic paraplegia.

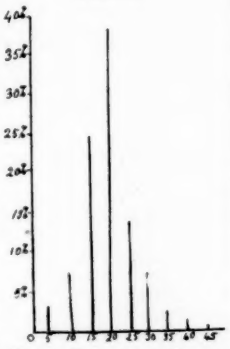
in the case of hysteria. In hysteria, owing to the ignorance of the subject of the physiology of the symptom mimicked, the affection of these subsidiary mechanisms would never be suggested to him.

Whilst in the great majority of cases this rule holds good, and is indeed sufficiently constant to be our standard method of differentiation between organic and functional disease, it is not quite universally true. It would appear that certain mechanisms are so closely allied with the normal exercise of particular functions that although their existence and connexions are unsuspected by the patient it is impossible for the main function to be suspended without their being also affected. Hurst has pointed out that in cases of total hysterical deafness the start or jump to a loud sound may be suppressed. Such suppression

of an involuntary mechanism does not, however, appear to be true of the affective reactions. I have never failed to obtain a galvanic reflex to a loud sound in cases of hysterical deafness. Another example of the difficulty in drawing an absolute line between voluntary and involuntary symptoms in hysteria is furnished by the vestibular reactions.

I have been able successfully to suggest a definite vertigo to two cases of hysteria who complained of ill-defined symptoms of giddiness. In both these cases when they were asked to perform the pointing test with their eyes shut they invariably showed a deviation corresponding to the direction of the suggested vertigo. Thus in the absence of the start reaction we have an involuntary mechanism definitely suppressed and in the vertigo reaction we have it appropriately altered, when a strict interpretation of hysteria in the terms of Babinski's definition would require them to remain unaffected. What may be the nature of the pathological changes responsible for this hypoexcitability of the mechanism of affection in hysteria it is impossible at present to specify. That the organic change exists prior to the development of the more obvious symptoms may be inferred from a study of the previous history of such cases. The diagram (Fig. 5) is constructed from the statistics of Kraepelin of the age-incidence of hysteria based on 430 cases. Although the years immediately succeeding puberty are those most affected by "Sturm und Drang" it would hardly be expected that the fall in the curve would be so steep were it not that a definite amelioration of the organic response rather than a disappearance of environmental stress is the responsible factor.

FIG. 5.



Kraepelin's curve of age-incidence in hysteria.

CONCLUSION.

At the risk of wearying by reiteration, I will again call your attention to the absence of any proof that the early experiences of the hysteric differ from those of the majority of mankind and to the fact that they therefore cannot be held to play any considerable part as predisposing factors. Of the disturbances of mechanism responsible for the psychoses I do not propose to speak. We have already seen how the observations of Mott and his pupils may be considered to have definitely settled the question of the organic origin of dementia præcox. The profound metabolic disturbances in manic depressive insanity, though still awaiting investigation, are indicative of a similar organic basis. Through the kindness of Dr. Mapother I was able to satisfy myself that the seemingly violent emotional activity of mania is unaccompanied by objective signs of hyperexcitability of the mechanism of affection. Were but a tithe of the attention at present devoted to the classification and tracing of psychogenic disturbances in the insane given to an objective study of their nervous mechanism by physiological methods, we should probably before long have remedied the deplorable condition of the pathology of insanity. Unhappily asylum authorities have not yet recognised the necessity for observers skilled in physiological methods.

In concluding these lectures I must acknowledge with the profoundest sense of obligation the kindness and encouragement in their preparation that I have received from Sir Frederick Mott, in whose laboratory at the Maudsley Hospital the experimental work connected with them has been performed.

THE TREATMENT OF THE IMPERFECTLY DESCENDED TESTICLE.*

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HOWEVER we look at the problem of the imperfectly descended testicle it must be conceded that our present methods of treatment are unsatisfactory. Our knowledge of the condition, so far as it goes, points to the lack of some hormone whose exact nature and point of origin have hitherto eluded scientific research. The future of treatment will, undoubtedly, be in the provision of the missing chemical stimulus, but until we are in a position to do this we must perforce employ methods which fall short of this ideal in their intent, and anything which will further or improve the technique of these measures must not be neglected. From this standpoint it is of first importance to recognise two classes of cases of deranged testicular descent. In the first the testicle starts along its normal path and then becomes arrested before it has emerged from the inguinal canal—that is, an inhibition occurs of a process begun in normal fashion. In the second the testicle emerges from the external abdominal ring, but instead of passing into the scrotum it is diverted to some abnormal situation (the ectopic testicle).

When the organ is simply arrested in its normal path to the scrotum experience has shown that average activity cannot be expected from it, but an ectopic testicle may histologically and functionally be a normal organ. As Thomson Walker says,[1] "the imperfectly descended testicle may never produce spermatozoa, and when it does, this activity may but last for one or two years and then disappear. But all observers have agreed that such testicles produce the internal secretion necessary for the development of the male characters."

In treating this condition our choice lies between two procedures, orchidopexy and orchidocœlioplasty.

Orchidopexy.

Many operations have been designed for the placing of the testis into the empty scrotum. This is the procedure of choice when it is possible without prejudicing the subsequent development of the organ. The obstruction to the easy retention of the testis in the scrotum is the shortness of the spermatic vessels. The experience of all surgeons is that the tendency to retract after operation is very great, but this does not apply to the ectopic testicle. Published statistics have not distinguished between the ectopic and the incompletely descended testicle, and they point to better results than can be expected, and indeed occur, if only the cases of arrested descent be considered. In this connexion it is to be remembered that an inguinal testicle is frequently an ectopic organ. It is very common to find that the testicle has emerged from the external abdominal ring and then turned upwards and outwards towards the anterior superior spine of the ilium coming to lie upon the surface of the external oblique. When this has happened the spermatic vessels are often of almost normal length and the testicle can be placed in the scrotum without them being an obstruction to this manœuvre. The same applies to the perineal testicle. It is not always the case in crural ectopia. Should the testicle emerge from the external ring and then be dragged into the thigh, as described by Eccles, the spermatic vessels would probably be of sufficient length, but I have not operated upon such a case. In a true crural ectopia I opened the inguinal canal, dragged the hernial sac and testis up along the crural canal (as in the inguinal operation for femoral hernia), but

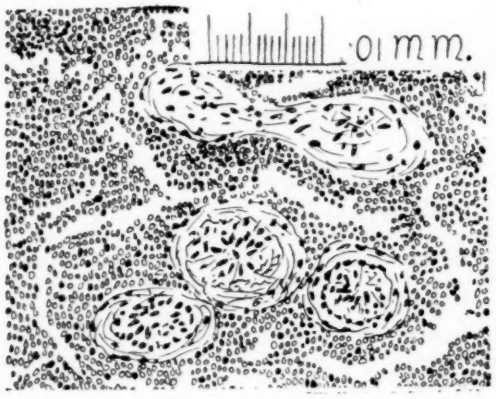
* A paper read before the Royal Society of Medicine on June 1st, 1921.

[1] Text book of Genito-urinary Surgery, 1911.

found the spermatic vessels too short to allow of the testis being placed without tension in the scrotum. True crural ectopia of this kind has been denied to exist by Eccles,[2] but a similar case to mine was reported by J. A. C. Macewen.[3]

The problem of bringing down by operation a testicle arrested in the inguinal canal is, to my mind, insoluble, if it is to be effected without damage to the gland. It is, indeed, possible to bring down and fix in the scrotum many testicles by adopting the procedure recommended by Bevan.[4] The essential step of Bevan's operation is the division of the spermatic vessels, it being maintained that the artery to the vas is capable of carrying sufficient blood to the testicle to keep up its activity. Bevan devised his operation after a consideration of the work of J. Griffiths,[5] who, after tying the spermatic artery and veins in the dog experimentally, came to the conclusion that one of three results followed: (1) atrophy, (2) suppuration and necrosis, (3) no interference with the normal functioning of the organ. In operations upon man suppuration and necrosis should not occur. It was due to sepsis in the experimental work. On carefully reading Griffiths's paper it will be found that in only one animal did no alteration in function or structure occur and, in making a post-mortem examination, he was able to demonstrate by injection that the circulation through the spermatic artery and veins had been re-established. Now this re-establishment of the circulation cannot possibly take place when Bevan's operation is performed on man because the spermatic vessels are not only ligated but cut across. Mixter[6] has reported that Bevan's operation is usually followed by great atrophy of the testicle, and with this statement my own experience is in agreement.

FIG. 1.

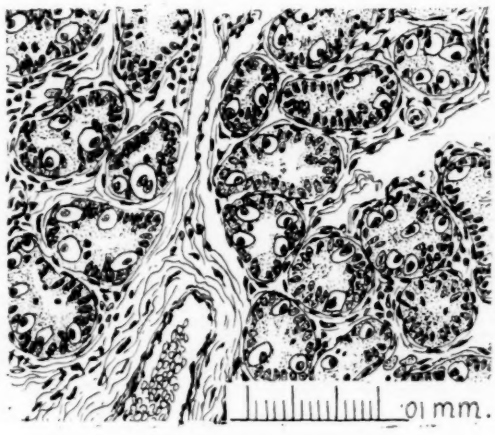


Human testicle three days after Bevan's operation had been performed, showing hæmorrhagic infarction and necrosis of tubules.

In 1913 I performed Bevan's operation on an adult man with an inguinal testicle and hernia. In suturing the wound the superficial epigastric vein was transfixed. The suture tore a hole in the vein and maintained the patency of it, and bleeding from the wound was continuous. Three days later the wound was opened up. The superficial bleeding point was not thought to be sufficient to account for so much hæmorrhage, so I examined the ligated divided ends of the spermatic vessels. There was no hæmorrhage from them. The testicle was removed and the inguinal canal sewed up completely. The testicle was sectioned and Dr. E. H. Kettle's report was as follows: "The condition is practically one of infarction. In the hæmorrhagic areas of the testicle the tubules are necrotic and structureless and stain a faint pink. Shadows of nuclei can be seen. The tubules are separated from one another by blood. In the globus minor the tissues are œdematous and infiltrated with blood and there is some angioblastic reaction."

Fig. 1 is a line drawing of the section and it shows the degenerated tubules and infiltration with red

FIG. 2.



Rabbit's testicle four months after orchidocœlioplasty.

blood cells. Looking at this it is difficult to conceive that the gland would ever recover sufficiently to perform any function spermatogenic or internal secretory in nature. An organ which was able to produce and maintain the male characters or, at least, to make its contribution towards this end had been converted by my operation into a useless appendage. My conviction is that this is the usual result of performing Bevan's operation.

C. Davison[7] published an ingenious method of operation, the essential feature being the division of the deep epigastric artery and internal inguinal ring, and the flattening out of the small angle formed by the spermatic vessels as they run from the abdomen to the inguinal canal. Unfortunately, this does not increase the useful length of the spermatic vessels sufficiently for it to be of great use in the average case. Walther's operation, which has been adopted by Mr. Philip Turner, is useful in just those cases where the deficiency in length of the spermatic vessels is not a great obstacle.

Orchidocœlioplasty.

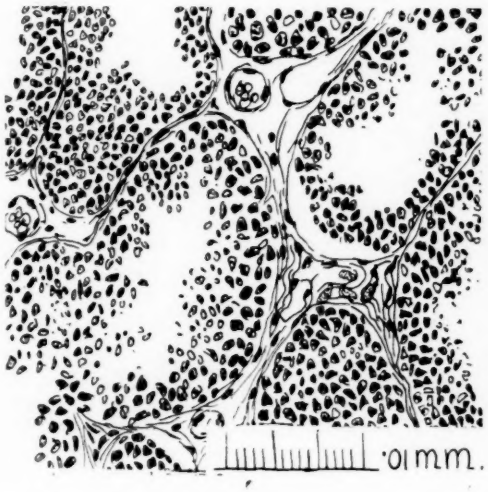
The alternative to placing the testicle in the scrotum—namely, replacing it in the abdomen intra- or extra-peritoneally—has not received very much attention from surgeons. The objections urged against it are: (1) that sections of retained testicles with rare exceptions show little evidence of spermatogenesis; (2) that testicles placed in the scrotum frequently increase in size and function normally; (3) that, experimentally, abdominal replacement causes testicular atrophy.

It is true that the retained testicle maintains its fœtal characters histologically. This may be not because of its position but because of the congenitally deficient impulse to development. The fact that testicles placed in the scrotum frequently develop normally is simply an expression of delayed development. A certain number of retained testicles descend late and become normal organs finally.

[2] The Imperfectly Descended Testicle, 1903, pp. 10–12.
[3] THE LANCET, 1920, i., 655.
[4] Jour. Amer. Medical Assoc., Sept. 19th, 1903.
[5] Journ. Anat. and Phys., vol. xxx., p. 81.
[6] Boston Med. and Surg. Journ., 1916, lxxv., No. 18, 63.
[7] Surg. Gynæc. and Obstet., 1911, xii., p. 283.

The third objection rests upon some experiments performed on dogs by Joseph Griffiths.[8] He states that following his operation the spermatogenic cells degenerated and the tubules were left with a lining of a single layer of cells elongated towards the centre. Griffiths gave no details of his actual procedure, so

FIG. 3.



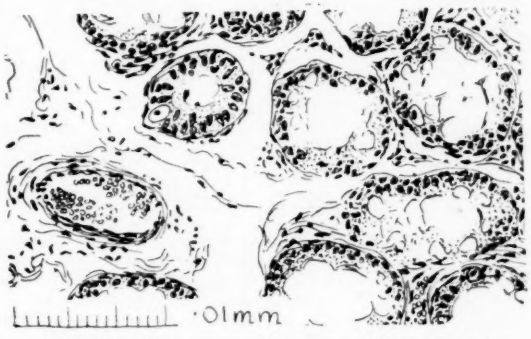
Normal rabbit's testicle.

I have repeated the experiments in two adult and one young rabbit. In this animal the tunica vaginalis is not shut off from the peritoneal cavity, and it is easy, after a laparotomy, to drag the testicle up into the abdomen. In one animal this was done on the left side through a lateral laparotomy wound, and the thick gubernaculum cut across. Great care was taken not to injure the spermatic vessels or vas, and the gland was sutured to the abdominal wall by a stitch going through the gubernaculum. Healing occurred by first intention and there were no obvious effects produced. Four months later the animal was killed and both testicles removed for examination. The abdominal testicle was found to have shrunken in size, its weight being 1·75 g. compared with a weight of 5 g. for the opposite normal organ. Figs. 2 and 3 are drawings from sections of the abdominal and scrotal testes. In the abdominal testicle there is a complete disappearance of spermatozoa; the spermatogenic cells are degenerated and those derived from them are absent, so that there is a diminution in size of the tubules. Other cells lining the tubules are not so affected and their nuclei take on the stain in normal fashion. The interstitial tissue is much increased. There is no evidence of any vascular change. In the interstitial tissue, Leydig's cells, so obvious in the human testis, are not detectable. I regard Fig. 2 as representing the end-result on the structure of the seminal tubules, for four months in the rabbit correspond to a span of a number of years in a human life.

Fig. 4 shows something of the genesis of these changes. This testicle had been replaced in the abdomen by an inguinal operation for two months only. It shows less interstitial cell proliferation and fibrosis. The most interesting features are the changes in the tubules themselves. In the tubule cavities are the evident remains of the degenerated spermatogenic cells, whilst there is a lining layer of a single row of low epithelium. Undoubtedly, the low cells elongate centripetally. Thus it will be seen that after abdominal replacement the spermatogenic cells and their derivatives degenerate, whilst certain cells lining the tubules, presumably not concerned in the spermatogenic function, remain alive. Probably these cells by their activity maintain the male characters, for Von B. Romeis[9] has pointed out that Steinach's assertion[10] that sex characters depend upon the interstitial cells of Leydig has not been confirmed by other authors, and that the function of these cells is still undetermined, whilst Sejous asserts that certain cells in the seminal tubules correspond to the suprarenal medullary cells and are part of the chromaffin system upon the integrity of which the male characters depend.

The questions may well be asked: Why do these degenerative changes occur when the testis is simply replaced in the abdominal cavity? Why has its function been so seriously deranged? Need it be an inevitable result? It was in answer to these problems that I was tempted to repeat Griffiths's experiments, which have, so far as I know, not been carried out by other observers. I approached the problem with the idea, almost amounting to conviction, that there must either be some interference with the vascular supply, or some obstruction of the vas deferens, produced by the operation. If this were so and such injury were shown to be avoidable, orchidocœlioplasty would become the operation of choice in the incompletely descended testicle. Griffiths's experiments were performed upon dogs. I selected the rabbit because in this animal the cavity of the tunica vaginalis remains connected permanently with that of the abdomen, so that peritoneal fluid bathes the testis equally when it lies in either cavity; moreover, the testicle can be pulled up into the abdomen with scarcely any disturbance of the neighbouring parts. The experiment in the rabbit would seem, therefore, to be more simple and less liable to disturbing factors than in the dog. Injury to blood-vessels or vas deferens was sedulously avoided, and microscopical

FIG. 4.



Rabbit's testicle two months after orchidocœlioplasty.

sections lend no support to the view that any derangement of the blood supply occurred in the experiments. We are thus driven to furnish some other explanation of this baffling phenomenon of testicular atrophy, and I think it is to be found by a consideration of the anatomy of the testicle. This gland is unique in the relation of its secreting acini to its excretory duct. There are no comparatively straight channels running from the secreting elements to fuse obliquely with neighbouring ducts to constitute an ever enlarging tube until the main duct is reached, as, for example, in the pancreas. In the testicle, between the seminal tubes, which are themselves very tortuous, averaging 2 ft. in length, and the main excretory duct—the vas deferens—the testicular secretion has to follow a very devious course. First it passes through the convolutions of the coni vasculosi, and then along the tube of the epididymis, a minute channel 20 ft. or

[8] Jour. Anat. and Phys., xxvii., 1892–93, p. 483.

[9] Münch. Med. Woch., August 27th, 1920.

[10] Verjüngung durch experimentelle Neubelebung der alternden Pubertätsdrüse, 1920.

more in length, folded repeatedly on itself, with a multitude of sharp flexures. Thus a great vis a tergo must be required to overcome the resistance of this intermediate path. Is the secretory pressure in the seminal tubules sufficiently high for this purpose? I think not. The delicate cells here present, undergoing frequent mitoses, give anything but the appearance, in microscopic section, of being subjected to such constant pressure. The necessary force I believe is obtained by contractions of the cremaster muscle on the soft testicular and epididymal substance. If this is so we have an explanation why, when an abdominal replacement is performed, the external secretory cells are unable to function against the great resistance of the intermediate path. The internal secretory cells, whether they be in the interstitial tissue or reside in the tubules, are not so affected, their secretion finding outlet through the circulation.

FIG. 5. FIG. 6.

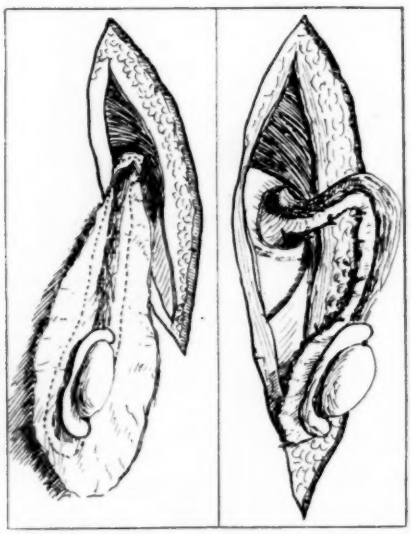


FIG. 5.—Diagram to show how the tunica vaginalis is cut when an abdominal replacement of the testicle is to be made.

FIG. 6.—Diagram to show how the tunica vaginalis is sewn back so as to form a small peritoneal fold behind the cord. The peritoneal opening can then be sutured without any danger of compressing the cord structures.

The practical application of this knowledge amounts to this, that after an abdominal replacement no hope of the development of the power of spermatogenesis can be indulged in, but, on the other hand, it can be assumed that the internal secretory function will be carried on as usual. When the surgeon is confronted with the choice between a Bevan operation and an abdominal replacement there can be no question that the latter is the proper choice, for it is unlikely that after Bevan's operation any function at all will remain to the gland. But there is another possibility to be faced. An inguinal testicle may only be delayed in its descent and be destined to continue its passage ultimately into the scrotum and to reach full development. If such a testicle were placed in the abdomen all hope of spermatogenesis would be lost. To minimise this risk it is desirable to postpone operation until 8 years of age or even 12 years unless there is some other factor indicating earlier measures. The chief factor determining early operation is the presence of pain either due to partial torsion or to muscular traumatism. Both these factors cause fibrosis of the organ and prevent its development. A bubonocele is not an indication in itself, and in any case up to four years no truss should be worn. But if there is a large hernia, or if symptoms of strangulation occur at any time, early operation is imperative, and abdominal replacement should be the method of choice.

In older children and adults it is easy to separate the hernial sac from the cord structures and to make an adequate extraperitoneal nook in the iliac fossa for the reception of the gland, but in young children the peritoneal sac is so exquisitely thin and frail that its separation from the spermatic cord becomes almost impossible. In such patients an intraperitoneal replacement is done. The procedure is as follows:—The sac is split up to the internal ring; at this level two-thirds of the circumference of the sac are divided transversely, and the incision is carried down on each side of the cord at about one-third of an inch distance from it (see Fig. 5). Behind the cord and epididymis the two cut edges are sutured with fine catgut, so that both these structures become surrounded completely by peritoneum, and at the aperture of communication with the abdomen an artificial mesorchium for the emerging cord is made (Fig. 6). The testicle can now be replaced in the abdomen and a satisfactory suture of the aperture of emergence made without there being any danger of injuring the spermatic vessels by the stitching. The inguinal canal is closed as in the radical cure of hernia.

Conclusions.

1. The future treatment of the incompletely descended testicle will lie in the direction of furnishing the missing stimulus to full development.

2. The ectopic testicle can usually be transferred to the scrotum without endangering its future growth.

3. It is not possible to implant a testicle arrested in the inguinal canal into the scrotum without damage to the organ.

4. The replacement of such a testis into the abdomen will destroy any prospect of ultimate spermatogenesis, while it will not interfere with the internal secretory function. The seminal tubules are unable apparently to secrete against the high resistance imposed by the passage through the coni vasculosi and epididymis, unless they are aided by the contractions of the cremaster muscle.

5. Early operation is not recommended. An uncomplicated bubonocele is no indication for operation, but attacks of torsion or strangulation are.

6. When it is impossible to bring down the testicle into the scrotum without endangering its blood supply, orchidocœlioplasty is preferable to removal. The technique of the operation is indicated.

GASTRIC OPERATIONS:

A NOTE ON ONE HUNDRED CONSECUTIVE CASES.

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GASTRIC surgery has passed through several phases. A few years ago the last word seemed to have been said in the surgical treatment of disorders of the stomach. More recently a feeling was abroad that all was not well with gastric surgery, that gastro-enterostomy was a bad operation, that excision of ulcer was disappointing, and that, bad though the results of the physicians were, the results of the surgeons were even worse. More recently still, as numerous articles and discussions have shown, opinion has veered again and surgeons at any rate are well pleased with their results. A variety of remedies for one disease suggests inefficient treatment, and the varied procedures invented for the treatment of gastric ulcer might suggest that surgical treatment was unsatisfactory. As in everyday life, so in surgery, there have been waves of fashion, and the treatment of gastric ulcer has been especially at the mercy of the prevailing fashion. The writer believes that the great majority of operations by capable surgeons for lesions of the stomach are satisfactory and that the failures are due to the adoption of the wrong operative procedure. The essence of surgery is experiment—much

more so when an attempt is made to cure permanently a condition the cause of which is unknown. Numerous theories of ulceration have been advanced—oral sepsis, embolism, intestinal stasis. The modern trend is to search for some broad pathological basis. Association of symptoms and pathological findings has for some time pointed to the right iliac fossa as the starting-point of gastric and duodenal ulcers. The appendix, the terminal ileum, and the ascending colon have borne the brunt in turn. The most attractive and the most recent addition to the subject is contained in an original and very suggestive paper by G. E. Waugh in the *British Journal of Surgery*[1] on the Morbid Consequences of a Mobile Ascending Colon. Although discussion of the general part of that article is beyond the scope of this paper, yet acknowledgment must be made here of the substantial relief his work must bring to a very large body of sufferers. The patient who before would have been subjected to colectomy, ileo-colostomy, or the removal of an inoffensive appendix can now be offered an operation by which he will lose nothing and may gain much. This must be said in passing. But for the moment it is only necessary to consider Waugh's theory of the formation of duodenal and gastric ulcers. He attributes the ulcer formation to the weight of a loaded and mobile colon causing destruction of tissue at the point of strain. Exact figures are not available, but it is believed that in most cases of ulcer in this series an abnormally mobile colon was present. This does not necessarily mean that ulcer is caused by the mobile colon. An abdomen in which the colon is abnormally mobile is a pathological abdomen, and as such is more prone to pathological processes than the normal type. The abnormal mobility is the predisposing cause. What is the exciting cause? Waugh's theory is a mechanical one. He believes that the pull of bands and ligaments determines the ulcer, and adduces much evidence in its favour. He has successfully treated formed ulcers of the stomach and duodenum by colopexy only. But even if it is granted for a moment that mobile colon is indirectly or directly the cause of ulcer it must be confessed that in the class of ulcer dealt with in this paper there was not the surgical courage and optimism to leave the ulcer untouched in the belief that healing would straightway follow. In two of these cases the ulcer had practically perforated: sometimes withdrawal of the stomach was sufficient to cause it to perforate. In the case of other large callous ulcers involving most of the stomach tissue death had gone so far that natural repair could not be expected. In two cases routine microscopical examination of chronic ulcer showed an early carcinoma at the base.

Problem of Dealing with Ulcers.

Even, then, if we look with favour on Waugh's theory, the problem of dealing actively with the ulcer is still before us. Some years ago the writer determined to test the various approved surgical methods of dealing with stomach disorders and to keep a close watch on his patients afterwards. All patients were subjected to a complete chemical and radiographic examination and a large amount of material was investigated. This paper is based on 100 consecutive cases. No case is included that was operated on less than 18 months ago. Cases of acute perforation and congenital pyloric stenosis of infants have been omitted. An attempt has been made to collect, by interview or by letter, reports from all cases. The result has enabled the writer to arrive at certain definite conclusions, for his own guidance, as to the operative procedures which will give the best results in different types of case. In the treatment of ulcers the extent of success is only limited anatomically. Ulcers that are entirely accessible can be cured. The inaccessible can be relieved. With tumours it is the same, early recognition in this case being the dominant factor.

[1] British Journal of Surgery, January, 1920.

The operations may be tabulated as follows (O.M.: operation mortality):—

			O.M.
1. Gastro-enterostomy for	(*a*) duodenal ulcer	21	0
	(*b*) gastric ulcer	20	1
	(*c*) dilated stomach	1	1
2. Excision of simple ulcer		14	1
3. Partial gastrectomy for	simple ulcer	22	1
	hypertrophied and dilated stomach	2	0
	myoma	1	0
4. Pyloroplasty		1	0
5. Partial gastrectomy for	carcinoma	7	1
	sarcoma	1	0
6. Inoperable carcinoma		7	1
Gastro-enterostomy for carcinoma		3	1

Gastro-enterostomy.

Gastro-enterostomy is a most valuable operation for diseases of the stomach, but it has been very much abused. Disappointing results in gastric surgery are attributable rather to the performance of gastro-enterostomy without adequate indication than to any other factor.

The clear indications for gastro-enterostomy are: (1) gastric stasis due to organic obstruction of the stomach; and (2) an ulcer of the stomach or duodenum which may be afforded rest and allowed to heal by a short-circuiting of the food path.

The absolute contra-indication is an atonic dilated stomach. A more debatable indication is the presence of an ulcer in such a situation in the stomach (cardiac end) that gastro-enterostomy cannot give rest to the ulcer. Neutralisation of the acid juice is given as the justification of this procedure, but in 45 per cent. of ulcers of the body of the stomach in this series examined by Dr. E. H. Shaw the acidity was normal or reduced. This theory does not appeal to me, and I have found in these cases that the further from the cardiac end and the nearer to the duodenum the ulcer was situated the better were the final results.

(*a*) *Gastro-enterostomy for Duodenal Ulcers.*—Gastro-enterostomy was performed 21 times for duodenal ulcers. There were no deaths. In accordance with the experience of others the results were very satisfactory; 15 cases are under observation at the present time, and of these 13 enjoy perfect health and have no digestive trouble whatever. One suffers from discomfort and a feeling of hyperacidity after meals, and one has vague abdominal pains, but no symptoms directly referable to the very large ulcer which was short-circuited. The six others were all in excellent health when last seen at periods varying from four months to two years after their operations. The operation performed has been the usual posterior "no loop" operation, with the stomach opening in the Mayo line. Catgut was used throughout. The pylorus was closed in most cases. The immediate results seemed to be better and the post-operative course smoother after ligature of the pylorus. The final results were not much affected.

(*b*) *Gastro-enterostomy for Gastric Ulcers.*—Twenty cases were operated upon, of which one died. The fatal case was that of a woman, aged 59, who was found at operation to have a large perforation of the pylorus which had been closed by adhesion to the gall-bladder. Gastro-enterostomy was performed and the hole closed. Unfortunately, the pylorus leaked and she died 16 days later. Post mortem extensive sloughing of the pylorus and duodenum was found. Of the 19 cases remaining 14 have been seen or questioned at the present date and 13 are in good health. One suffers from "occasional indigestion." Of the remaining five, two appeared to gain little relief from the operation, one has been lost sight of, and one, a case of double gastro-enterostomy for a severe hour-glass stomach, has never been quite satisfactory. Five ulcers were of the cardiac, 15 of the pyloric half of the stomach. The poor results were cases of ulceration near the cardiac end of the stomach. The writer has for some time ceased to perform this operation for ulcers in this location in the absence of gastric stasis. Nor does he employ it now for hour-

glass stomach. A partial gastrectomy is preferable. The operation performed was the usual posterior, except in two cases, where, owing to the fixation of the stomach to its bed, a modified anterior operation was done, the jejunum being pulled through a hole in the transverse mesocolon and great omentum and anastomosed to the lower border of the anterior wall of the stomach. These cases did exceptionally well. In most cases the pylorus was ligatured and in two cases actually divided. The additional time and risk attached to this procedure is perhaps not justified, although the immediate and later results of this operation were exceedingly satisfactory; three cases had undergone an operation for perforation before, and their ulcers had remained active and necessitated further treatment. In all cases the appendix when present was removed at the same time.

(*c*) It has already been stated that gastro-enterostomy for dilated stomach not due to organic obstruction is a bad operation. The writer performed it in one early case of general visceroptosis with marked gastric symptoms, and the patient died of high intestinal obstruction. In such cases the atonic musculature renders gastro-enterostomy hazardous, but even if a vicious circle is avoided no benefit is likely to be derived from the operation.

Excision of Simple Ulcer.

A few years ago this was much in vogue, but now is less frequently practised. By excision is here meant wedge-shaped resection (nine cases), sleeve resection (one case), local excision—i.e., artificial perforation and closure (three cases), transgastric excision (one case). One case died of pulmonary embolism 24 hours after operation. Excision appeared at one time to be an attractive method of removing the disease completely without sacrificing too much of the stomach. Of late it has been performed less frequently. Its final results are disappointing. Five cases report themselves as quite well, one was quite well when last seen one year and eight months after operation, four are not happy with their digestion, and four have been lost sight of. The results of excision cannot be compared with those of partial gastrectomy. It has the following disadvantages: It has a higher mortality. It is often most difficult of performance. It is apt to leave a deformed stomach. On two occasions pylorectomy has been performed for hour-glass stomach resulting from a previous excision. This series of cases shows that a partial gastrectomy can be performed with less risk and greater permanent advantage to the patient.

Partial Gastrectomy for Simple Conditions.

Partial gastrectomy has been performed on 25 occasions with one death: (*a*) for simple ulcer, (*b*) for hypertrophied and dilated stomach, and (*c*) for myoma.

(*a*) *For Gastric Ulcer.*—It is undoubtedly the most satisfactory method of dealing with ulcers of the lesser curve and the pyloric half of the stomach. The immediate results are excellent. The only fatal case was that of a man of 47 with a very large ulcer and in very poor condition. He died suddenly of syncope 12 hours after operation. Post mortem: No other cause of death could be found. The post-operative course is exceptionally easy. Patients suffer from no more shock and much less vomiting than after gastro-enterostomy. The final results are excellent. Of the 21 cases of ulcer successfully submitted to gastrectomy 15 have been examined recently and are in perfect health. Six are known to have been cured of their digestive complaints at periods of from one to two and a half years after operation. I know of no more grateful class of patient than those who have had gastrectomy performed for ulcer. This, after all, is the best test of the operation, but it has other features to commend it. It removes an ulcer especially prone to malignant change. In two cases where ulcers were removed in the belief that they were simple routine pathological examination showed early carcinoma beginning in the edge. It is more certain to cure symptoms than gastro-enterostomy alone. Two cases had had gastro-enterostomy previously performed elsewhere for ulcer of the lesser curve and pylorus, and their symptoms had persisted. At further operation the ulcers were found still active and partial gastrectomy was performed. They have been in perfect health during the three and a half and four and a half years which have now elapsed since operation.

(*b*) *For Hour-glass Stomach.*—Partial gastrectomy is the ideal method of treatment for hour-glass stomach. It is more usual to perform gastro-enterostomy to the proximal or distal pouch, or both. Symptoms may be relieved, but the final result is ugly in the surgical sense, and a deformed stomach is left with ulcer or scar untreated. The best results, in the writer's experience, are obtained by complete removal of the ulcer or scar and distal pouch and the fashioning of a new stomach out of the proximal half. This series includes cases where gastro-enterostomy and gastrectomy have been done, and the final results of gastrectomy are strikingly better.

And for Hypertrophied and Dilated Stomach.—Cases are sometimes met with when very long-standing pyloric obstruction has caused enormous hypertrophy and dilatation of the stomach. Usually the pylorus has been the site of an ulcer which has healed some years before. In two cases of this series the size of the stomach was astonishing. The stomach was a huge thick-walled bag with a greater curvature reaching to the pelvis. The pylorus was in either case quite atrophied and would just admit a quill. It was manifestly impossible to drain the stomach at its lowest point by a gastro-enterostomy, so in each case the vast excess of stomach was removed, the cut ends were closed, and gastro-enterostomy performed to the new stomach of normal size. One case is worthy of record.

J. W., aged 69, had suffered for 50 years from pain after food and vomiting. For the last 20 years he had washed out his stomach six times a week. He was becoming feeble from malnutrition and toxæmia. At operation the pylorus was almost completely stenosed, and the stomach dilated and hypertrophied to an extraordinary degree. About half the stomach, including the pylorus, was resected. The circumference of the resected part measured 12 in., 11 in. of the greater curvature being removed. There was practically no shock and the patient made a rapid convalescence. He is still in excellent health (at the age of 73) with no stomach symptoms whatever, although for some months after operation his 20 years' habit was so strongly ingrained that there was difficulty in restraining him from his daily stomach wash-out.

(*c*) *For Myoma of the Stomach.*—There was one case of pyloric obstruction which was found on operation to be due to a rounded tumour of the pylorus projecting into the lumen. The patient was a woman, aged 61. A partial gastrectomy was performed and has been followed by complete relief. The tumour proved to be a myoma.

The Operation.

The operation employed for partial gastrectomy for ulcer has followed largely the Billroth II. method. The vessels are first controlled, and the gastro-hepatic and gastro-colic omentum divided. The duodenum is crushed and divided and the duodenal stump inverted. Posterior gastro-enterostomy is performed—the jejunum being joined to the proximal part of the stomach. The ulcerated part of the stomach is then removed through healthy tissue and the cut end closed. The writer has tried other methods but finds this the easiest and safest; 40 to 45 minutes is the average time consumed, and drainage is usually not necessary. If in doubt as to the duodenal closure, it is wise to leave a tube in the wound for 24 hours. In two cases a duodenal fistula appeared a few days after operation. If the patient is put on an egg diet—12 to 14 eggs a day—the fistula rapidly closes. Catgut is used throughout. The chief difficulties met with during an operation are the result of dense adhesions. Adhesions of the ulcer to the pancreas are not so formidable as they

may at first appear. As a rule, with cautious persistence the stomach can be dissected off the pancreas and a portion of the pancreas can be sacrificed if necessary. Adhesions to the transverse mesocolon, especially when the mid-colic artery is involved, present greater difficulty. The vessels may be so endangered that the possibility of having to perform colectomy as well makes the risk greater than the condition warrants and radical treatment of the ulcer should not be attempted.

After-treatment.—Nothing is allowed by the mouth for 36 hours; 10 per cent. glucose and saline is given rectally. Morphia is given without stint for the first 24 hours; after 36 hours fluids are allowed until the morning of the fourth day, when a purge is given and the diet is then rapidly increased. Chicken is usually taken on the tenth day and the patient is allowed up on the fourteenth day and home on the seventeenth day. Convalescence is, as a rule, surprisingly easy. In fact, when once the operation is concluded there is even less cause for anxiety than after gastro-enterostomy. Vomiting is uncommon. Nor is there any need to diet the patient after recovering from the operation. There have been no cases of gastro-jejunal or jejunal ulcers following gastro-enterostomy or gastrectomy.

Pyloroplasty.—A young woman, aged 22, presented the symptoms and signs of pyloric obstruction. At operation a spastic condition of the pylorus was found. The pyloric ring was so rigid and thick and resembled so closely the hypertrophic pylorus of infants that it was decided to try Ramstedt's operation. This was done and has proved quite successful. She writes two and a half years after operation: "I have not had a return of the complaint and my operation has been quite successful." The cause of this curious condition of the pylorus was not determined. There had been no history of stenosis in infancy. There was no sign of ulceration or inflammation. The hypertrophy of the circular fibres was most marked. The rest of the abdomen was normal.

Operations for Malignant Disease.

Sarcoma.—There was one case of sarcoma in this series. It has already been fully reported.[1] Gastrectomy was performed in 1916 and the patient has recently reported (December, 1920) that he is still in perfect health, hard at work.

Carcinoma.—In 17 cases of carcinoma of the stomach seven were found on operation to be beyond surgical help by reason of extension and dissemination. In three the growth was not removable, but gastro-enterostomy gave relief for a period; seven cases were subjected to gastrectomy; one case died as the result of operation. It was that of a man of 58 with carcinoma of the body of the stomach involving the colon. The growth was removed together with part of the transverse colon. He was making an excellent recovery, when 14 days after operation a small perforation occurred at the colon line of suture and he died from shock and toxæmia within a few hours. The other cases did immediately well, but the late results are very disappointing. One, a girl of 22, died of widespread dissemination nine months after operation. Another died of local recurrence one and a half years later. Another died of local recurrence three years later. One died of pneumococcal meningitis four months after operation, and at the autopsy the abdominal condition was thoroughly investigated and no sign of disease could be found. On the face of it the results of gastrectomy for malignant disease appear disappointing, but these cases were all rather advanced and had been treated medically for some considerable time. It is every surgeon's lament that so many cases of cancer of the stomach are not suspected or diagnosed until the disease is too widespread for hope of cure. Earlier recourse to surgery in intractable stomach complaints and the more radical treatment of ulcer by gastrectomy whenever possible should improve the outlook.

[1] Brit. Jour. of Surg., 1916–17, iv., 301.

Conclusions.

In the operative treatment of ulcers of the stomach and duodenum it is of paramount importance to maintain a breadth of view and to consider each ulcer on its merits. The surgeon who at once associates every ulcer with gastro-enterostomy or with excision, as the case may be, will be disappointed in his results. It must be remembered that the causation of ulcer is unknown, or at least not proved. Even if we believe we know the primary cause of which ulcers are but a secondary manifestation, yet, however desirable it is to find the cause and relieve it, the ulcer itself is fraught with such possibilities of disaster that immediate and direct treatment of the ulcer is generally desirable. Nevertheless, granted that the ulcer requires direct surgical treatment, it is our duty to explore the whole of the abdominal cavity before embarking on any set procedure. In every case of this series a complete examination of the abdominal cavity was made. The appendix was removed when present as a general precaution. As a rule it looked innocuous. Anchoring of the terminal ileum (Lane's kink) was found on a few occasions and freed. Abnormal mobility of the colon was a frequent concomitant and in recent cases (too recent for inclusion in this series) has been treated by Waugh's method. In three cases cholecystectomy for gall-stones was performed at the same time.

After the preliminary examination the exact presence and situation of the ulcer is determined. The ulcer must be established beyond doubt. If necessary, the stomach must be opened and the mucous membrane inspected from within. It is easy to be misled by a thickening of the lymphatics along the ulcer course, or on the pylorus, or by thickening of the peritoneum, into the error of believing an ulcer to be present when none is. It is, no doubt, easy when the patient or the audience are expecting the performance of a gastro-enterostomy, to conclude that a few adhesions and slight thickening of the duodenum represent an ulcer. This is the class of operation which has brought discredit on gastro-enterostomy.

If an ulcer is present it can usually be classified into one of three groups: 1. Ulcers situated, usually on the anterior surface of the stomach, sometimes on the posterior, proximal to a line drawn vertically downwards from the beginning of the lesser curve. 2. Ulcers situated between this line and the pyloric vein—usually on the lesser curve—sometimes on the posterior surface of the stomach, more rarely anteriorly. 3. Ulcers beyond the pyloric vein, most frequently at the beginning of the second part of the duodenum.

1. Ulcers of the first group are the least satisfactory to treat, and fortunately, are the least common. They are difficult by reason of their comparative inaccessibility. The best available treatment is local excision, which may be done with a knife or by Balfour's method with the cautery. Posterior ulcers are difficult. Access must be obtained by free division of the hepatic or colic omentum if necessary, or by a transgastric operation. Gastro-enterostomy is not carried out unless definite gastric stasis has been demonstrated before. Any associated condition, mobile colon, appendicitis, ileal kink, is appropriately dealt with at the same time. Until the cause of ulcer is definitely established the treatment of ulcers in this situation cannot be quite satisfactory. All that this treatment amounts to is artificial perforation and closure, and it is known that subsequent perforations are not uncommon. One of this series had previously perforated twice and at the third operation an ulcer was found about to perforate again. Four cases had previously perforated and were operated on for recurrence of gastric symptoms. It is true they were all in the neighbourhood of the pylorus, which is, perhaps fortunately, peculiarly the ulcer zone.

2. Ulcers of the lesser curve and pyloric part of the stomach are very amenable to surgical treatment. The ideal method for ulcers in this situation is a partial

gastrectomy. The smaller stomach left after removal of the greater part of the lesser curve and pylorus seems to produce no disability afterwards. The disease is removed entire through healthy limits. There is no operation which causes so little anxiety both at the time and during convalescence with so great a permanent improvement in the subsequent health of the patient. There will be certain cases—e.g., cases of low vitality demanding a quick operation where gastro-enterostomy only is advisable. The results, however, judging from these cases, will not be so good as with the more complete operation. Wedge-shaped and sleeve resections have been given up. They are more difficult of performance. The result is often unsightly and the permanent effects not so good as can be obtained by partial gastrectomy.

3. The consensus of opinion has been for some time that duodenal ulcers can be cured by the operation of gastro-enterostomy. This series of cases, short though it is, certainly bears this out. It is probable that bad results from this operation come from mistaking duodenal symptoms for duodenal ulcer, and performing gastro-enterostomy without definite pathological evidence of ulcer. In the writer's experience the classical symptoms of duodenal ulcer are not so definite as has been stated, and hunger pain, as Waugh has pointed out, is symptomatic also of other conditions.

AN EXPERIMENTAL STUDY OF PROPHYLACTIC INOCULATION IN TYPHUS FEVER.

BY PROF. S. KUSAMA, M.D.

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OF the three successful examples of prophylactic inoculation against acute infectious disease caused by an invisible virus—viz., Jenner's vaccination against small-pox, Pasteur's preventive treatment of hydrophobia, and Koch's inoculation against rinderpest—the first two are made with a so-called fixed virus, which has been passed through the bodies of heterologous animals for many generations, its attenuation having been effected in the process, while the third is made with the bile of infected cattle. Although the nature of rinderpest vaccine is not yet clearly known, it seems highly probable that it contains the virus in a considerably attenuated state. Hitherto all investigators who have experimented in prophylactic inoculation of acute infectious diseases with accompanying exanthem have used either attenuated virus or bile of infected animals, but none save those already mentioned has yet succeeded in obtaining any efficacious result with them.

Since last spring I have been experimenting with typhus, the causative agent of which seems also to be invisible virus, and have employed the Japanese monkey (*Macacus fuscatus*) in an endeavour to find a means of prophylaxis against it. I found that, as stated by Nicoll, human convalescent serum was efficacious in preventing infection by the virus. I also found that monkeys' convalescent serum, if used in a certain dosage (e.g., more than 1 c.cm. per kilogramme of body weight of the animal), has also a preventive effect against infection by 50 times the minimal morbid dose of the virus, which fact was reported before the meeting of alumni of the Kitasato Institute for Infectious Diseases in April, 1919. Such passive immunisation may be of experimental value, but it is difficult to apply in general practice, as the serum cannot be obtained cheaply enough at the present time. I therefore attempted to discover an attenuated virus. For this purpose I treated the blood of the infected monkey either physically or chemically, or inoculated the virus into the body of various species of animals for several generations, or used virus withdrawn from the animal towards the close of the course of the disease; all trials with these materials, however, proved negative.

Observations on Results Obtained.

From my study of typhus during the past two years—in which period I have employed over 200 Japanese monkeys—the following facts have been clearly observed:—

(*a*) The incubation period differs according to (1) the site of inoculation of the virus, (2) the virulence, and (3) the quantity of virus or blood. The incubation period is shortest when the virus is inoculated into the vein, or is very strong, or given in a large quantity. By injecting the virus hypodermically, or employing a virus of weak potency or in small quantity, the incubation period is lengthened. If virus of the same potency is inoculated at the same site, the incubation period will naturally be influenced only by the quantity.

(*b*) The incubation period is indirectly proportional to the pyrexial period. If the symptoms develop after a longer period of incubation, the days of disease are fewer, and vice versa.

In the light of the above-mentioned conclusions, it may be said that under the same conditions the incubation period is lengthened or shortened according to the quantity of virus inoculated; the period may be lengthened at will by inoculation of a very small quantity of the virus. Thus we may find a dose of virus, small enough to shorten the days of disease, producing practically no symptoms, whilst at the same time giving a certain degree of active immunisation to the inoculated animal. If this idea prove true, there will be no need to attenuate the virus either by fixing or by passage through the animal body; simply by giving a very small dose a certain degree of immunisation may be bestowed on the animal. Considering this to be attainable, the next step was to find out the quantity which would bring about such theoretical results in monkeys.

Details of Experiments.

Experiment 1 (August 28th, 1919).—The strain of virus here employed was obtained from a female case, Midzuguchi, in 1918, in the Aomori Prefecture, by the author and his assistant Yanagisawa. It had passed through 32 generations at the time of experiment, the virulence being just enough to infect a Japanese monkey with an attack of 9 to 11 days pyrexial period, after 8 days' incubation, by intravenous injection of 0·5 c.cm. of the sick monkey's blood. The infected blood was first diluted with sterile sodium citrate solution (2 per cent. sodium citrate and 1 per cent. glucose in physiological saline), in order to prevent clotting, and then diluted with the saline to different concentrations, so that 1 c.cm. of each dilution corresponded to 0·1, 0·01, 0·001 c.cm. of the original blood. In all experiments here reported the same dilutions were used.

Three Japanese monkeys were treated as follows: No. 100 was given 0·1 c.cm. of guinea-pig's blood (thirty-second generation of Midzuguchi strain); No. 99 was given 0·01 c.cm. of guinea-pig's blood (thirty-second generation of Midzuguchi strain); and No. 103 was given 0·001 c.cm. of the blood of monkey No. 102 taken on the fourth day of sickness (thirty-sixth generation of Midzuguchi strain). All the injections were made intravenously. Monkey No. 100 had onset of fever after an incubation of 9 days and No. 99 after 16 days, but No. 103 had no rise of body temperature even after 25 days. Nos. 100 and 99 had pyrexial periods of 7 and 8 days respectively.

By the results thus obtained the theory has so far been proved to be true; a small quantity of the affected blood—e.g., 0·001 c.cm.—did not produce the clinical symptoms at all, while the larger the dose the longer was the pyrexial period and the shorter the incubation period. In order to see whether monkey No. 103, which had no clinical symptoms, had acquired active immunity or not, I injected hypodermically 0·5 c.cm. of the blood of monkey No. 104 (withdrawn on the fifth day of sickness produced by inoculation with Midzuguchi strain at the thirty-eighth generation). This was just 50 times as much as the minimal morbid dose. The animal had no attack of the disease, and was thus clearly proved to have acquired a certain degree of immunity from the first inoculation.

Encouraged by this favourable result I wanted to repeat the experiment, but unfortunately I could not obtain a monkey, and so the strain of virus was lost;

the experiments were thus discontinued at that time. In May, 1920, I visited Korea and Manchuria with one of my colleagues, Kobayashi, to study typhus, which prevails there, and at Shunsen, Kogendo, in Korea, we obtained a strain of virus from a boy of 17, which we called "Korean strain"; another strain was obtained at Kuroishi town in the Aomori Prefecture, from a female aged 43, and was called the "Kuroishi strain."

Experiment 2.—In this experiment my object was to repeat my first experiment with fresh virus, to see whether or not some different result might be obtained; the virus employed in my first experiment had passed through monkeys' bodies for many generations, and I thought some change of virulence might have occurred. In the second experiment, therefore, the virus was passed only once through the monkey's body before use.

The first series of inoculations were of the Kuroishi strain (one generation), consisting of the infected blood of monkey No. 107, given intravenously as follows: to No. 109, 0·001 c.cm. of blood; to No. 120, 0·0001 c.cm. of blood. Neither developed any symptoms; and then 0·5 c.cm. was injected of the blood of monkey No. 97 (inoculated with the third generation of Korean strain, the blood being withdrawn on the fourth day of illness); this dosage, five times the minimal morbid dose, was given hypodermically to No. 109 and intravenously to No. 120 on the twenty-second day from the initial injection. The monkeys were then continuously observed for 40 days, during which time neither of them contracted the disease.

It may thus be seen that such small quantities as 1/100th and 1/1000th of the minimal morbid dose, given either hypodermically or intravenously, will confer upon the injected animal an active immunity against five times the minimal morbid dose.

Experiment 3.—In this experiment I endeavoured to find the minimal prophylactic dose and minimal morbid dose when virus was given hypodermically. Six monkeys were employed, being given monkey's blood infected by the Korean strain, as follows:—

Monkey.	Dosage in c.cm.	Monkey.	Dosage in c.cm.
No. 141 ..	0·1	No. 136 ..	0·0001
No. 140 ..	0·01	No. 135 ..	0·00001
No. 139 ..	0·001	No. 134 ..	0·000001

No. 141, given 0·1 c.cm. of infected blood under the skin, had the onset of symptoms after 15 days, and six days of pyrexial period. None of the other experimental animals, which were given 0·01 c.cm. or less, had clinical symptoms. The minimal morbid dose, therefore, may be considered to be 0·1 c.cm. of the blood. The five monkeys which had been free from clinical symptoms were each given hypodermically 0·5 c.cm. of the blood of the infected monkey No. 138 (taken on the second day of the pyrexia), and the minimal prophylactic doses necessary were observed. As control animal, untreated monkey No. 144 was also given 0·5 c.cm. of the infected blood. The control animal, No. 144, had a pyrexial attack on the eighth day from inoculation, the pyrexia subsiding on the twenty-third day, while the experimental monkeys, Nos. 140 and 135, had pyrexia after an incubation period of 15 days and fever lasting for six days, with symptoms far less severe than those of the control.

The above-mentioned experiment proved that as the minimal morbid dose is 0·1 c.cm. of the blood by subcutaneous injection, 1/100,000th of the minimal morbid dose protects the animal against five times as much as the minimal morbid dose of the virus. It is also interesting to notice that the virus above a certain dosage gives the animal practically the same degree of immunisation, irrespective of the doses actually injected.

Experiment 4.—This experiment was done to determine the presence or absence of virus in the blood of the animals which had received either the prophylactic injection or the proof injection. In results hitherto obtained, the blood of animals in which experimental typhus had been produced always contained more or less of the virus throughout the course of the experiments. The virus was clearly demonstrable in the blood on the day before the febrile attack, and also throughout its duration. It has been, however, impossible to demonstrate its presence in the animal's blood during the incubation period, for even an injection of so much as 4·0 c.cm. of blood taken during the incubation period produced no symptoms in the second animal. This fact suggested the impossibility of tracing the virus in the blood of monkeys which had received a small quantity of virus for prophylactic purposes. I have, however, taken 1·0 c.cm. of blood from each of the 11 monkeys employed in the experiments, mixed the samples, and injected the entire mixture into another monkey; this animal showed no symptoms. Although this is not a conclusive proof of the absence of virus in the blood of the injected animals, it might be affirmed that in the bodies of injected animals the virus does not increase sufficiently to be demonstrable by an animal experiment.

Summary.

The results thus far obtained may be summarised as follows: None of the 12 monkeys which received injections, either hypodermic or intravenous, of one-tenth or less of the minimal morbid dose of virus had a febrile attack. This fact is very important, for in my last attempt the virus was injected without attenuation of its virulence by passage through animal bodies or by any other known methods. The degree of immunity thus obtained was not the same as in the first experiment, when the hypodermic prophylactic injection protected the animals against 50 times the minimal morbid dose; in the second experiment, in which the prophylactic injection was made both hypodermically and intravenously, the animals were protected against five times the minimal morbid dose; and in the third experiment the hypodermic prophylactic injection protected the animals against five times the minimal morbid dose. According to my experiments, the virulence of the experimentally infected monkeys' blood was greatest on the first and second days of the symptomatological attack and gradually decreased in the course of the disease until at the end of the pyrexial period it had lost a large percentage of its maximum virulence. As regards the site of injection, the intravenous injection produced a severer attack of the illness than the hypodermic; it was therefore natural that the results of immunisation of experimental animals had been so discrepant. And it may be concluded that the immunisation which can be conferred upon the animal is just great enough to protect against five times the minimal morbid dose of highly virulent virus.

The fact that the same degree of immunisation was possibly obtained by the use of very different doses (e.g., 1/10 to 1/100,000th of the minimal morbid dose) can be explained as follows: The virus that has been introduced into an animal's body may enter the general circulation to a certain degree in spite of the animal's individual protective power or resistance, acting at the same time as the antigen; thus it stimulates the formation of antibodies in the animal, but the antibodies then serve to oppose the general circulation of the virus in conformity with the individual resistance. And if all the virus is thus destroyed before it circulates sufficiently to cause the onset of symptoms, a certain degree of immunity is bestowed on the injected animal. If this assumption be true, a general circulation of virus should occur before a certain degree of immunisation is obtained, when a very small quantity of virus has been injected. If the general circulation of the virus should be so rapid that the virus approaches the minimal morbid dose, the prophylactic inoculation with the virus itself would seem highly dangerous. But with the typhus virus, as stated above, no pyrexia occurred among the monkeys after the prophylactic injection. From this fact the growth of the virus in injected animals does not appear to be rapid.

The results thus obtained would be more interesting if the experiments could be applied to the human body. The practical application must, however, be postponed until the virulence of the prevailing virus, the individual differences in susceptibility, and degree of immunisation are fully established. The three strains that I have employed—i.e., the Midzuguchi, Korean, and Kuroishi strains, were nearly equal in virulence as regards the monkeys, but no one can tell if the same holds true for men. The question of the susceptibility of man against typhus virus forms a problem difficult to solve, but there is no doubt that man has a much higher susceptibility than the monkey. The difficulty may be regulated by the use of a more diluted virus, but the immunisation thus obtained might not then be strong enough to protect the injected person against infection. These problems

must be settled by future research. The purpose of the present paper is only to draw the attention of investigators to the fact that the use of a minute quantity of typhus virus, not attenuated by a special method, can harmlessly confer upon an animal a prophylactic power against the virus. It is sincerely hoped that this discovery may throw some light on the prevention of those diseases which have invisible viruses as their agency.

SOME OBSERVATIONS ON BASAL METABOLISM IN MENSTRUATION.

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THE theory that the life processes of women undergo a periodic variation correlated with menstruation has been suggested by many writers and was emphasised as long ago as 1876 by Jacobi, and again by Goodman in 1878. Since then the effect of menstruation on the life processes of women has been studied in various ways. The lines along which these investigations have proceeded include observations on the temperature, pulse-rate, blood pressure, the metabolism of nitrogen, phosphorus, and calcium, the excretion of creatine, and the CO_2 output and O_2 consumption. The results recorded are extremely conflicting, but the later, and probably more accurate, observations all point to the fact that, with the possible exception of temperature and perhaps also of pulse-rate, there is no periodic variation in any of these values. In the case of temperature most workers agree that there are slight but definite periodic changes correlated with menstruation.

In view of these conflicting results it was decided to undertake yet another series of experiments comparing the physiological processes in the menstrual and inter-menstrual periods. The points chosen for determination were: (1) the basal metabolic rate of normal women during menstruation and between menstrual periods; and also at these times (2) the cost to the organism of a certain definite piece of work, and (3) the rate of recovery from that work.

(1) Observations were made on five subjects, the basal metabolism being determined, as far as possible, each day during the menstrual periods and three or four times between these periods. In three cases the subjects came to the laboratory about 8 A.M., in the post-absorptive condition, and lay down for half an hour before the experiment began. A five-minute sample of expired air was collected in a bag, measured, and analysed by means of the Brodie gas analysis apparatus. Of the other two subjects more numerous observations were made, and the samples collected while they were still in bed. The height and weight of each subject were determined, and the surface area read off from a Du Bois height-weight chart. From these data, the O_2 consumption per minute per sq. m. of body surface was calculated, and Table I. gives the average results for each subject for the different phases of the monthly cycle.

TABLE I.

Subject.	No. of periods covered by observations.	Total No. of observations.	C.cm. O_2 consumed per sq.m. per min.			
			Pre-menst.	Menst.	Post-menst.	Inter-menst.
I.	5	39	139	139	145	146
II.	4	25	144	143	141	142
III.	4	29	140	140	132	139
IV.	6	58	116	109	109	116
V.	2	33	111	114	117	116

When the results are expressed in this way the respiratory quotient (R.Q.) is not taken into consideration. As this was found to be variable and not constant, as is frequently assumed, the calorie value per sq. m. per hour was calculated, taking the R.Q. into account. These results are given in Table II.

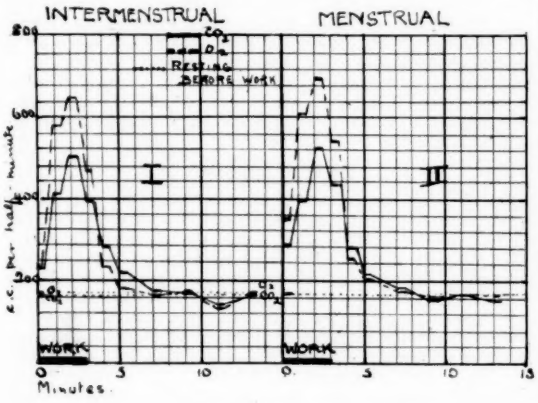
TABLE II.

Subject.	Caloric value per sq.m. per hour.			
	Pre-menst.	Menst.	Post-menst.	Inter-menst.
I.	40·7	40·2	40·4	40·9
II.	40·4	40·4	40·5	39·8
III.	40·2	40·8	38·9	40·3
IV.	33·5	31·3	31·5	33·1
V.	32·2	32·5	32·8	32·2

It will be noticed that the inter-menstrual values vary considerably in the different subjects, although the mean value, 37·2, agrees with that given by Benedict as an average value for women. The variations during the different phases of the sexual cycle are so small that they cannot be regarded as showing any marked effect due to menstruation; the fluctuations which normally occur are often greater than these variations. This conclusion agrees with that recently expressed by Blunt and Dye, but it is not in accordance with the view put forward by Snell, Ford, and Rowntree. These observers, in a preliminary communication which appeared last year, expressed the belief that menstruation "does affect the basal metabolic rate in women at times in health and in disease."

(2) and (3) Although the results obtained show that the basal metabolism is not appreciably affected by menstruation, it seemed possible that the cost of work to the organism during the menstrual period might differ from that during the inter-menstrual period. Consequently a few determinations have been made to test this possiblity, and although these experiments are not yet completed, the method and an example of the results obtained are included here. A certain definite piece of work was performed on days during the menstrual period and again during the inter-menstrual period. The amount of exercise is very much less than that performed in the experiments of Krogh and Lindhard, and of Douglas, Campbell, and Hobson, on the subject of respiratory changes during work and rest. This small amount of exercise was selected as it was found that the subject could undertake it without any real physical fatigue; with greater amounts this was not so. The work consisted in stepping up and down on a low stool in time with a metronome; the exercise lasted for three minutes, 36 steps per minute were taken, the stool being 6¼ in. high. The basal metabolism was first determined in the usual manner, and then, after the subject had been standing for about five minutes, a half-minute sample of expired air was taken before exercise began. During the exercise half-minute samples of expired air were collected during the first half of each minute. After the cessation of exercise the subject remained standing and half-minute samples of expired air were collected during the first three minutes, and then during the fifth, seventh, ninth, and eleventh minutes, by which time it was found that the metabolism was restored to normal. The O_2 intake and CO_2 output for each of the half-minutes were determined and the results are given in the graphs, Fig. I. being a result obtained during the inter-menstrual period, and Fig. II. during the menstrual period. These indicate that the cost of work and the rate of recovery from work are the same during the menstrual and inter-menstrual periods. In both cases there is a sharp rise in the CO_2 output and O_2 intake during exercise, followed by a gradual return to the resting value when work ceases. The greatest drop occurs during the first two minutes of rest, the fall after this being much more gradual. The variations in the R.Q. are interesting. Whilst the work is being done the R.Q. falls at first, usually being lowest during the second minute of work with a tendency to recover during the third minute of work. After cessation of work the R.Q. rises very rapidly,

is usually highest during the second minute of rest, and then falls slowly to normal with perhaps slight fluctuations. Although more of these experiments must be done before any definite conclusion can be drawn, the processes appear to be identical during the menstrual and inter-menstrual periods.



In conclusion, I wish to thank Prof. Winifred Cullis for suggesting to me this piece of work and for help and criticism during the work, and the Industrial Fatigue Research Board for the purchase of some of the necessary apparatus. I should also like to thank most warmly the subjects of the observations for their coöperation over a long period.

Bibliography.

Jacobi: The Question of Rest for Women during Menstruation, Boylston Prize Essay, 1876.
Goodman: Cyclical Theory of Menstruation, Amer. Jour. Obstet., 1878, ii., 673.
Giles: The Cyclical or Wave Theory of Menstruation, Obstet. Trans., 1897, xxxix., 115.
King: Concerning the Periodic Cardiovascular and Temperature Variations in Women, Amer. Jour. Phys., 1914, xxxiv., 203.
L. Zuntz: Ueber den Einfluss der Ovarien auf den Stoffwechsel, Archiv. für Gynaek., 1906, lxxviii., 106.
Blair Bell: Menstruation and its Relationship to Calcium Metabolism, Proc. Roy. Soc Med., 1908.
Sherman, Gillett, and Pope: Monthly Metabolism of Nitrogen, Phosphorus, and Calcium in Healthy Women, Jour. Biol. Chem., 1918, xxxiv., 372.
Gillett, Wheeler, and Yates: Material lost in Menstruation of Healthy Women, Amer. Jour. Phys., 1918, xlvii., 25.
Krause: Quar. Jour. Exper. Phys., 1911, iv., 293; 1914, vii., 87.
M. S. Rose: Creatinuria in Women, Jour. Biol. Chem., 1917, xxxii., 1.
Stearns and Lewis: Diet and Sex as Factors in the Creatinuria of Man, Amer. Jour. Phys., 1921, lvi., 60.
Blunt and Dye: Basal Metabolism in Normal Women, Jour. Biol. Chem., 1921, xlvii., 69.
Snell, Ford, and Rowntree: Studies in Basal Metabolism, Jour. Amer. Med. Assoc., 1920, lxxv., 515.
Krogh and Lindhard: Changes in Respiration at the Transition from Work to Rest, Jour. Phys., 1919–20, liii., 431.
Campbell, Douglas, and Hobson: The Respiratory Exchange of Man during and after Muscular Exercise, Proc. Roy. Soc., 1920, Series B., ccx., 1.

THE LATE PROF. G. T. LADD.—The death is announced at Newhaven, Connecticut, of George Trumbull Ladd, A.M., D.D., LL.D., emeritus professor of mental and moral philosophy, Yale University, author of "Elements of Physiological Psychology" and many other theological, philosophical, and psychological works.

PORTSMOUTH VENEREAL DISEASES NOTICES.—The affixing in public lavatories of notices giving instruction as to prevention of venereal diseases was discussed on August 9th at a meeting of the Portsmouth Town Council, when certain members of the council expressed their strong disapproval of the practice, stating their belief that it was an offence against decency, and that the notices were shameful and disgraceful. Other members pointed out that a visitor from the Ministry of Health had recently been to Portsmouth and had found no fault with the council's action in the matter; moreover, that action had been approved by a large conference of all the leading organisations of the town.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING AT NEWCASTLE-ON-TYNE.

SECTION OF ORTHOPÆDICS AND DISEASES OF CHILDREN.

WEDNESDAY, JULY 20TH.

AT the first session, Mr. A. H. TUBBY, the President, being in the chair, a discussion on the

Early Diagnosis and Treatment of Anterior Poliomyelitis

was opened by Dr. E. F. BUZZARD (London), who emphasised some of the frequent mistakes made in the diagnosis in the initial stages of this disease. He considered that given a more widespread recognition of the conception of acute poliomyelitis as one of the specific fevers of childhood, the clinician should be able to arrive at an early diagnosis with greater frequency. It was to be remembered that, contrary to the ordinary accepted teaching, pain was often a prominent symptom of the onset. Confusion sometimes arose in connexion with the resemblance of this disease to other acute infective conditions of the nervous system—viz., meningitis, toxic polyneuritis, Landry's paralysis, myelitis, and lethargic encephalitis. By careful examination it was usually possible to avoid errors from a clinical survey of the patient alone. A serological diagnostic test was theoretically available, but owing to the time involved was of little practical use. In approaching the early treatment of poliomyelitis it was essential to visualise the morbid anatomy of the disease. Treatment might be conveniently discussed under three headings representing stages in the progress of the condition: (1) the treatment of the patient who is ill with the disease, (2) the treatment of the patient during convalescence; and (3) the treatment of the resulting disabilities. During the first two stages a policy of inactivity, supplemented by several well-defined active measures, was indicated. The pyrexia and pain should be treated on the usual lines; in an epidemic, an immune serum, if available, should be given a trial, and the routine use of hexamine, although of doubtful efficacy, was to be regarded as reasonable. Physiological rest, however, was the great essential, and combined with it, the adoption of correct postures for the patient as a whole and for each portion of the body. The paralysed parts should be kept warm and their local circulation promoted by light rubbing. For about 18 months after the onset of paralysis varying degrees of recovery of function in muscles could be expected. This period was one of probation, and should be occupied by the continuance of muscle relaxation, and the preservation of contractility by interrupted galvanic stimulation of the individual muscles. The conventional electrical bath was both harmful and a waste of time. After a period of correct treatment extending over some 18 months, further mitigation of the patient's disablement depended on artifice or operation, these measures being provided by the intervention of the orthopædic surgeon.

Mr. R. C. ELMSLIE (London) laid stress on the practical value of early diagnosis with reference to the immediate application of the principles of complete rest. He advocated the routine use of complete fixation of the recumbent patient on a frame or preferably a plaster-of-Paris "bed." At this stage all physio-therapeutic treatment was to be condemned. In the position adopted for fixation the correct posture for the limbs was of course essential. In the stage of later convalescence, muscle re-education should be begun and it was important to remember that all active movements were to be carried out over a very small range in order to avoid the risk of fatigue. Later on, for the lower limbs, suitable walking instruments were absolutely essential, and unless devised and ordered by experts often merited the criticism which their use evoked. In the later stages, for the preservation of nutrition of the limbs, the simplest measures

involving no special apparatus or equipment were quite adequate, and in particular he instanced the use of warm water.

Mr. D. MCCRAE AITKEN (London) was in agreement with the previous speakers as to the fundamental efficacy of complete rest in the early stages, and as to the necessity for the avoidance of physio-therapeutic manœuvres. He described in detail the correct postures to be adopted in the case of the upper and lower limb, and laid special emphasis on the prevention of the common distortions of the lower limb—viz., flexion of the hip and knee.

Mr. W. R. BRISTOW (London) outlined the rôle of electro-therapy in the early nutritional treatment after the acute stage had passed. At first the interrupted galvanic stimulation was to be used, and this should always be applied to each individual muscle. Later, in recovering muscle, the interrupted faradic current should be utilised as soon as an effective response was elicited, but it was important to realise that a faradic response in a muscle did not mean that full function would necessarily return. During the application of all forms of electrical stimulation the appropriate splints were to be retained in position. He pleaded for the rational use of electro-therapy in this and similar conditions, and for its application to be taught more efficiently in the medical schools.

Dr. F. H. HUMPHRIS (London) dealt with the early treatment of acute poliomyelitis from the standpoint of the pure electro-therapist, and claimed that paralysis could be prevented or even cured by the early application of the various forms of electrical treatment. He considered that the whole theory of treatment by rest was open to doubt. Electrical treatment should be instituted in these patients on the first day of the illness, and its site of application should be the spine. In the later stages, of all forms of electro-therapy the static current was perhaps the most valuable.

Prof. H. BROOKER MILLS (Philadelphia) gave a graphic description of the vast epidemic of poliomyelitis which ravaged the North American Continent in 1916. From the aspect of preventive medicine he considered that the isolation of contact cases, and the local cleansing of the mouth and throat in infected individuals, were two measures of the greatest importance.

Mr. L. A. PARRY (Hove) questioned the suitability of the plaster-of-Paris "bed" advocated by Mr. Elmslie for use in ordinary hands, on the grounds of the difficulty of its construction. He also made an appeal for the invention of more suitable types of walking instruments than those generally in use.

Mr. HARRY PLATT (Manchester) deplored the propagation of such teaching as that advocated in the use of electro-therapy in the acute stages of anterior poliomyelitis. He considered that the discussion had already shown unanimity on the question of the physiological correctness of complete rest both for the inflamed spinal cells and for the locomotor system in general. In the reconstructive treatment of the later stages, the difficulties encountered made one realise the vital importance of the prevention of deformity. The common flexor contracture of the hips, which in many cases prevented the child from being made to walk, could be prevented if the position adopted in the early fixation stage included fixation of the hips in hyperextension.

Dr. W. MITCHELL SMITH (Stoke-on-Trent) quoted an interesting experience of an epidemic of the poliomyelitis type in pigs. He referred also to the difficulties of preventing the flexion deformity of the hips and the tilting and rotation of the pelvis.

The PRESIDENT mentioned that he had often noticed that a large number of children affected with poliomyelitis had brown eyes.

Dr. BUZZARD, in reply, reaffirmed the correctness of complete rest in the early treatment. He stated that he had listened to a lurid description of a child acutely ill, burning with fever, and with rapidly extending paralysis, being subjected to the application of a high frequency electrical current. If this was to be the future treatment of acute poliomyelitis in the early stages, then he could only hope that clinicians would never acquire the power of early diagnosis.

Arthrogenic Contractures.

Dr. MURK JANSEN (Leiden) gave in brief an exposition of his well-known views on the rôle played by muscles which act on more than one joint in the production of contractures during the course of or following arthritis. The muscles of the polyarticular class always tended to dominate the monoarticular muscles which showed early fatigue. The common deformities at the hip- and knee-joints were explained by the adoption of this thesis.

Birth Paralysis.

Mr. PLATT, in a short communication on birth paralysis (obstetrical paralysis, Erb's paralysis), considered briefly the modern conception regarding the pathogenesis of this disability in view of recent controversial opinions. The position now might be summarised as follows: (1) the clinical, experimental, and operative evidence was all in favour of the view that in the majority of cases there was a supraclavicular lesion of the brachial plexus; (2) there was a certain amount of evidence in favour of the view that a primary injury of the shoulder-joint capsule with secondary involvement of certain terminal branches of the brachial plexus might occasionally be met with; in this small proportion of cases all the clinical features of birth palsy might be present. From a practical standpoint it should be realised more universally that in the majority of patients spontaneous recovery of the paralytic phenomena occurred, and that operative exploration of the plexus was rarely needed. But this tendency towards natural recovery was in itself by no means always a beneficent factor, as it often determined a policy of inattention to the important postural treatment of the limb. Recovery of the spontaneous type was almost always associated with the development of a fixed internal twist of the whole arm, best marked at the shoulder-joint where the contracture was rendered more conspicuous by the accompanying posterior subluxation of the head of the humerus. In the older child the resulting disability was usually considerable and the deformity and general under-development of the limb became more and more unsightly as the years went on. As illustrating the frequency of this type of contracture might be quoted the figures of Fairbank (42 out of 60 cases) and in the writer's series 28 out of 34 cases. The contracture and subluxation could be prevented by early correct postural treatment, and in this connexion the common teaching—viz., of bandaging the arm to the side—was to be condemned whole-heartedly.

The treatment of birth paralysis could be considered under three headings: (1) early postural treatment; (2) the question of the indications for the operative exploration of the injured plexus; and (3) the treatment of the contractures in cases where the paralysis had undergone recovery. (1) At the earliest possible moment the limply hanging arm should be fixed on a splint in the position of abduction and external rotation at the shoulder, the elbow flexed, and the forearm supinated, and if necessary, the wrist in dorsiflexion. With the limb maintained the whole time in this position gentle passive stretching should be carried out daily in the region of the shoulder to prevent the occurrence of the internal rotation contracture. Later on muscle re-education, as far as is feasible in a young infant, was to be instituted. The posture was to be continued until the child developed the full power of active external rotation and abduction at the shoulder. Under such measures recovery was almost invariably seen to follow, and in the end there would be the absence of any contracture. (2) In the few cases where the paralysis was persistent after nine months of appropriate treatment, exploration of the plexus was to be considered, provided the clinical syndrome was not indicative of a lesion situated close to the spinal cord. (3) The shoulder-joint contracture could generally be overcome by manipulation under

anæsthesia in children under one year, and occasionally in children a little older. If complete reduction was not obtained at one sitting it was advisable to effect it in stages. After correction fixation should be kept up for a considerable period and preferably by means of a well-fitting plaster. The after-treatment was to be along the lines of the early postural treatment. Where the contracture could not be stretched by manipulation alone the open operation for division of the shortened structures was indicated. This might include, in addition to division of the subscapularis tendon, the coraco-humeral ligament and even the conjoined tendon of the biceps and coraco-brachialis. The original technique of Fairbank for the open operation has been modified with advantage by Sever, and in the experience of the writer could be expected to give satisfactory results provided the period of post-operative fixation was short and stretching and re-education were begun early.

No discussion followed the papers of Dr. Jansen and Mr. Platt owing to the limited time at the disposal of the Section.

THURSDAY, JULY 21ST.

At the second session, with Dr. H. MORLEY FLETCHER (London) in the chair, a discussion took place on

Blood Diseases in Children.

Dr. HUGH THURSFIELD (London), in introducing this subject, said that though it was now nearly eighty years since the discovery of the disease leukæmia had ushered in a period in which these diseases had been studied carefully by clinicians, it might at first sight appear that there had been little or no progress made. Yet if we considered the state of knowledge 20 years ago he believed that it was possible to demonstrate that the progress, though slow, was sensible. Our ideas on classification and differentiation of the diseases were clearer and more definite. He went on to plead for new methods in the study of blood diseases, contending that there had of late been too much concentration on what appeared to him to be the somewhat sterile study of the origin and nature of the white cells of the blood, while we were still grossly ignorant of the functions of most of these. Premising that he was about to lay down propositions in a more dogmatic manner than either his knowledge or his judgment permitted, he proceeded to classify the diseases under discussion into three groups: (1) congenital; (2) secondary; (3) primary, anæmias. For the purposes of the discussion he attempted to define exactly what is meant by anæmia, and the criteria of the different types. After some remarks on the congenital states of the blood, and on the secondary anæmias, he briefly discussed the nature of von Jaksch's pseudo-leukæmic anæmia of infants and then passed on to the problems of the primary anæmias. Again, for the purposes of discussion he proposed that there were only three types of severe primary anæmia known below the age of puberty—leukæmia, purpura, and that which he proposed to call the anæmia gravis of children. This last was perhaps more commonly known as aplastic anæmia, a name to which he took exception since it appeared to him to be a descriptive term applicable to some stages of any severe anæmia. Discussion of some of the problems of leukæmia followed, and he dealt with the differentiation of "aleukæmic leukæmia" and anæmia gravis. For this last type he insisted that its origin was infective, and that, like its analogue in the adult, pernicious anæmia, it was not a clinical entity. Remarks on treatment the success of which, in the speaker's opinion, depended entirely on the successful detection of the focus of infection brought the paper to a conclusion.

Prof. BROOKER MILLS (Philadelphia) opened the discussion with some appreciative criticism of the introducer's main contention that the cause of these complaints must be looked for in infective processes. He then referred to hæmophilia as possibly a congenital disease of the hæmopoietic system. He concluded by illustrating from his own and his colleague's experience the influence of hidden foci of infection on several remote organs or systems.

The CHAIRMAN did not agree with the introducer that the subjects of anæmia gravis were chiefly drawn from the hospital class of the community. He was inclined to think that it was not infrequently met with in well-to-do families, though in no class a common disease. He also doubted whether so sharp a line could be drawn between the different forms of the primary anæmias as Dr. Thursfield had suggested, considering that there were stages in the course of some of the acute leukæmias which it was impossible to distinguish from anæmia gravis.

Dr. J. F. GASKELL (Cambridge) agreed with the introducer that newer methods were eminently desirable in this field of knowledge and gave a very brief account of the trend of some researches at present being made at Cambridge by Dr. Howard Vines on the behaviour of the calcium content of the blood. Though the direct bearing of these researches on the clinical problems which they were considering was not obvious, it was clear already that the variation in the calcium had a profound effect on the whole hæmopoietic system.

Dr. JOHN THOMSON, Dr. LEONARD FINDLAY, and Mr. TYRRELL GRAY also contributed brief remarks; the first dealing principally with that mysterious disease melæna neonatorum, an unusual case of which was shortly described by Mr. Gray. Dr. Findlay thought that the introducer was mistaken in excluding Banti's disease from the category of children's anæmias, and made some interesting general criticisms on the subject of the debate.

Dr. THURSFIELD made a brief speech in conclusion.

Short Papers.

After the conclusion of this debate Dr. FINDLAY read a short paper on the Pre-natal Treatment of Syphilis, in which he advocated this method as the only satisfactory means of controlling congenital syphilis. The treatment of the infant after birth he regarded as quite definitely a failure, whereas the treatment of the pregnant woman had in his hands produced very favourable results.

This paper was discussed by Prof. BROOKER MILLS, Dr. A. A. S. SKIRVING, Dr. IVY MACKENZIE, and others, who for the most part were in agreement with Dr. Findlay. A resolution was passed by the Section calling the attention of the Council of the Association to the matter with a view to the earlier and more complete recognition of the syphilitic mother.

Dr. JOHN THOMSON then read a short paper on Some of the Problems of Hypertrophic Pyloric Stenosis, and Mr. TYRRELL GRAY discussed the surgical aspects of the same disease, based on the operation of some 50 cases at the Hospital for Sick Children, Great Ormond-street.

Dr. MORLEY FLETCHER, Mr. PAGE, and Dr. FINDLAY contributed remarks, but the discussion was prematurely closed owing to want of time.

FRIDAY, JULY 22ND.

Tuberculosis of Bone in Children.

At the third session, Mr. R. C. ELMSLIE being in the chair, Sir HENRY GAUVAIN opened a discussion on the General Principles of Treatment in this condition, pointing out that in 1912 Sir Harold Stiles advocated radical measures in the treatment of bony tuberculosis in children, while shortly afterwards, Mr. TUBBY, in opening a discussion on the subject at the Royal Society of Medicine, urged the adoption of conservative treatment, which was now the more general method of choice. The fundamental principle of all treatment was based on the fact that the condition is an osteitis or osteoarthritis occurring in a tuberculous child, such a lesion being secondary to an infection, and that therefore one must treat the patient generally. In the blood and urine were antigens present before the disease was clinically manifest; and some held that they could demonstrate tubercle bacilli in the blood at this early stage. As a general disease demanded general treatment, he was at present in favour of conservative treatment—i.e., designed to improve the patient's resistance, and to

preserve and restore the part affected. In this treatment great attention to detail was necessary.

The various forms of such treatment were: 1. Climatic—country and marine treatment, alternated if possible. 2. Diet, hygiene, &c. 3. Local treatment—rest generally, and immobilisation of the part. In the subacute or chronic stage the patient was got up with a suitable appliance. In convalescence a retention apparatus was used. 4. Abscesses—rarely opened. Invariably aspirate with due precautions. Surgery was now confined to a very limited sphere—e.g., cases of profuse suppuration, or the removal of septic focus. 5. Adjuvant measures: (*a*) heliotherapy was very valuable, accelerating the cure, though there were patients who could not stand it; (*b*) sea-bathing; (*c*) X rays; (*d*) vaccines—were limited in their usefulness, but of value where there were infected sinuses; (*e*) certain forms of chemotherapy.

The speaker then showed a series of slides descriptive of the methods in use at Alton and Hayling Island, and of typical cases. He pointed out that interesting results were being obtained from an investigation at present being carried out on the effects of heliotherapy and sea-bathing on the metabolism of these patients. In the diagnosis, one had to be on the look out for syphilitic arthritis, osteo-myelitis, and pseudocoxalgia. He emphasised that the most dangerous form of the disease was when it occurred in the flat bones of the skull, and that this was a condition where operation should be done at the earliest moment in order to prevent dissemination.

Mr. JOHN FRASER (Edinburgh) showed slides describing a certain type of diaphysitis which he considers to be a mixture of syphilis and tubercle in bone. He agreed in principle with Sir Henry Gauvain, but regretted that facilities for such treatment were not generally available in Scotland; hence early operation was more often necessary. He also approved strongly of heliotherapy and a certain form of tuberculin treatment.

Dr. W. CAMAC WILKINSON (London) emphasised the importance of early diagnosis by the practitioner, and indicated methods by which one can intervene long before the tragic results have developed. He held that bone tuberculosis was associated with the human type of bacillus, and therefore the first line of defence was the family. Bone tuberculosis was never the primary lesion, which was most commonly in the lungs or bronchial glands: (1) defence in the family must be strenuous—the carrier must be instructed and treated, and if necessary segregated; (2) defence in the bronchial glands—tubercle in these glands cannot be identified early, all tests fail except tuberculin; (3) defence in the bones—obtained by the use of tuberculin combined with treatment. He concluded (1) that tuberculin as a diagnostic is safe and trustworthy, and (2) that tuberculin as a remedy in proved ways is better than any other method, and indeed than all other methods.

Mr. F. C. PYBUS (Newcastle) deplored the lack of local facilities. His treatment therefore was based on the means at his disposal—i.e., the out-patient department. He agreed that Alton conditions are the best form of treatment. He never operated on such cases if he could avoid it. As regards abscesses, one should always aspirate and never drain. In the radical cure of abscesses or other foci there were two principles: prevent infection from outside, and prevent infection from inside. He pointed out that in single hip disease the single Thomas hip splint was not efficient.

Mr. TUBBY gave a short outline of the development of the campaign for the conservative treatment of surgical tuberculosis, and looked forward to the development of heliotherapy.

Dr. LOCKHART STEPHENS (Emsworth) presented the point of view of the general practitioner, who ought to recognise early tubercle. Large costly institutions were in themselves unnecessary, as sun and fresh air are free.

Dr. H. SCURFIELD (late M.O.H., Sheffield) asked the percentage of cure at Alton, and stated that in his opinion sanatoriums only patched up the cases.

Dr. T. H. MARTIN (Leasowe) said that in the Liverpool clinics the single Thomas splint was not used for cases of tuberculous hip. He gave statistics of cure at Leasowe, and said that a history of familial tuberculosis in these cases was rare.

Mr. MCCRAE AITKEN referred to the beginnings of the conservative treatment. Cases of bone tuberculosis must be rigidly excluded from contact with pulmonary cases. He agreed that the majority of surgical tuberculosis cases are not of human origin. He referred to his experiences with tuberculin, and stated that he had become frightened of it for orthopædic reasons—e.g., the possibility of ankylosis of a joint following a flare-up. He emphasised the absolute necessity for good and plentiful feeding.

Dr. CAMAC WILKINSON, asked by the Chairman to reply to questions raised, gave details of cure by tuberculin, and showed charts. He quoted recent statistics showing that in the large percentage of such cases the infection was human in type.

Mr. TUBBY then moved a resolution to the Council of the Association expressing the high opinion of the Section of the value of modern conservative treatment, and their realisation of the necessity for the multiplication of institutions similar to those already existing. Dr. Scurfield seconded, and the resolution was carried unanimously.

Sir HENRY GAUVAIN replied, quoting further statistics in favour of the human type infection. He took the occasion to thank Mr. Tubby for advice and help given in conservative treatment.

Milk Control and Tuberculosis.

Dr. H. M. CARGIN (West Hartlepool) read a short paper dealing with the legal and public health aspects of this problem, and advocating the necessity of rigid control—e.g., in the inspection of dairy cattle. An interesting discussion followed.

Dr. SCURFIELD stated that he did not think that the use of pasteurised milk avoided the danger of bovine tubercle, and he strongly advocated dried milk.

Prof. BROOKER MILLS (Philadelphia) described the methods used in the U.S.A. to handle the problem—the city milk commissions and their regulations.

Dr. J. D'EWART (Manchester) discussed the attitude of the farmer, and described the hospital milk-supply in Manchester. He did not think that dried milk was without danger.

Mr. ELMSLIE had seen scurvy, but not rickets, after the use of dried milk.

Dr. WILLIAMSON also referred to various points in the use of dried milk.

Demonstrations.

1. Cranioplasty, by Mr. A. E. MORISON (Sunderland) who discussed the indications for the operation, and briefly described his methods. He showed eight cases and numerous X ray photographs.

2. Hydrocephalus, by Dr. J. D. LICKLEY (Newcastle), who discussed the symptoms and signs, the pathology, and the operative treatment. He showed several casts, pathological specimens, and photographs.

3. On Finer Adjustment: with Special Reference to the Hand, by Dr. F. A. HORT (Sunderland), who discussed certain refinements in the use of plaster and of splints, showing modifications of certain splints and some beautiful plaster casts of zoological and botanical specimens, illustrating the refinements of which plaster was capable.

SECTION OF AMBULANCE AND RED CROSS.

WEDNESDAY, JULY 20TH.

This section was well attended by medical men from Northumberland and Durham interested in ambulance work.

Sir JAMES CANTLIE, President of the Section, occupied the chair at the session, and opened the proceedings with a well-reasoned address on the *Claims of First-Aid to be regarded as a Special Branch of Practical Surgery.*

He deplored the fact that such poor facilities were provided for the teaching of that important branch of

surgery. For instance, when they went to any of the big railway stations to teach first-aid, they generally found that nothing better than an old shed was placed at their disposal. The marvel was that first-aid had done so well; but they knew that it could do much better. The speaker recalled that his first class was held below the arches of Charing Cross station. To light that apartment all they had was a candle stuck in an empty bottle, and they drew their diagrams on a piece of white paper pinned up on the wall. Surely such an important branch of surgery was worthy of better teaching accommodation than a shed. He went on to tell how interest in first-aid work in this country really dated from a medical and sanitary exhibition held at South Kensington in 1881. Interest was first taken by German universities and hospitals in the subject, and it was Germany which taught the world military ambulance, although it was England which taught civil ambulance. Despite that, no British university had yet asked for a first-aid class to be held within its sacred walls.

In regard to its practical application the speaker pointed out that when a man received a hurt or a wound the danger period was in the first 20 minutes, therefore it was during that period that first-aid was so important, for everything depended on how the injured person was then treated. Who was it that had charge of the injured person during that critical period in civil life? It was the public, and it was from that standpoint that the question must be considered. He went on to speak of the delight of improvisation which after all was at the basis of first-aid work. He approved of ready-made appliances, but said they were seldom to hand when required. The danger he saw to-day was that the training was approaching too near to the study of medicine. If that went on they would be up against the doctors, and the result would be that the public would have to take up the teaching of first-aid. In conclusion, Sir James Cantlie paid a tribute to the doctors and ambulance men of Northumberland for the magnificent work they had done. He advocated strongly the establishment of colleges of ambulance in the chief centres in this country. "Give them their proper name, and give men a better and higher notion of what is the meaning of first-aid," he added.

Dr. ROBERT ANDERSON, Vice-President of the Section, said that during 40 years of teaching ambulance work in the North of England he had instructed thousands of persons, and he gave several examples of the instruction having been turned to practical account. He saw no reason why every man should not have some knowledge of ambulance work, and he approved of the scheme for the establishment of colleges of ambulance.

Sir JAMES CANTLIE then unfolded a scheme for an

X Ray Motor Ambulance Wagon Service

for Great Britain, describing the work in London and district, where such an ambulance had been provided by the Eccentric Club, an agency which had done much good in an unostentatious fashion. The question was a humanitarian one, and he was sure they would have no difficulty in obtaining the money to establish the service. With the aid of a display map the President showed how centres could be established throughout the country from which areas could be worked. He then demonstrated the value of the yoke sling, with which to carry a stretcher, condemning the old-fashioned sling, which put all the weight on the neck, and also the carrying of a loaded stretcher on the shoulders. With the yoke sling, modelled on the lines of the farm worker's yoke, two women could carry a man on a stretcher, whereas without it six women would be needed.

A discussion was contributed to by Dr. W. NUNAN (Bombay), Dr. J. G. D. CORT (Whitburn), and Dr. C. H. MILBURN (Ministry of Health).

SECTION OF ELECTRO-THERAPEUTICS AND RADIOLOGY.

FRIDAY, JULY 22ND.

Dr. R. KNOX (London), in his Presidential address, stated that the blood was especially suitable for investigation of the action of radiation on the living tissues. He emphasised the need for further precaution by the operator against the action of the rays on himself. He referred to the method of X ray treatment practised at Erlangen and regretted the recent statements in the press that cures of cancer were being obtained. These statements, he said, were premature, and judgment should be withheld until this method had been given an adequate trial in this country. The position of the radiologist in the treatment of malignant growths should be reconsidered. Surgery was the treatment to be given first, but combined treatment by surgery and radiation was better than either singly, and more radiation should be given than is the case at present.

Prof. G. L. GULLAND (Edinburgh) opened a discussion on

Radiation in the Treatment of Diseases of the Blood.

He showed that radiation should be used in diseases in which there was hyperplasia of the blood cells rather than hypoplasia, in the leukæmias rather than in the anæmias. If, in the future, the stimulating action of radiation could be increased and the destructive ac on excluded, the anæmias, especially pernicious anæmia, might be successfully treated. Radiation, when excessive, is able to exhaust the bone-marrow function and produce an aplastic anæmia, after a preliminary anæmia with a high colour-index. X rays should be more systematically tried in polycythæmia vera. The three main varieties of leukæmia react very differently to X rays. In acute lymphatic leukæmia X rays are useless and probably harmful. Chronic myelocythæmia responded best to treatment by radiation, and the speaker preferred radium to X rays. The neutrophiles were most affected and the normoblasts disappeared rapidly. Degenerated cells were found in large numbers in radiated blood. The speaker regarded a reduction of the white count to 20,000 as a signal for stopping the radiation. He regarded splenic anæmia as one of the most hopeful conditions for treatment by radiation. It seemed to him that the problem of the future is the determination of accurate dosage. The evil effects which radiation can produce may complicate the diseases treated by this means.—Prof. S. RUSS (London) showed that certain measured doses of X rays produced constant changes in the number of the lymphocytes, whereas the changes in the number of the polymorphs are quite irregular. After large doses of radium a greater regularity was observed in the behaviour of the lymphocytes than the polymorphs.

Dr. J. C. MOTTRAM (London) read a paper on

The Use of Blood Counts to Indicate the Efficiency of X Ray and Radium Protection.

He showed that exposure to radiation was followed by a diminution in the number of lymphocytes and polymorphonuclear leucocytes in the blood, and, to a less extent, of the red corpuscles. If these changes were noted in X ray and radium workers, and if they were persistent, they indicated that there was insufficient protection. He showed that it was necessary, when making blood examinations, to determine, not the normal limits of variation in the number of the corpuscles, but the normal distribution of variation, so that when a low count is recorded, its value can be estimated.—Dr. A. LEITCH (London) maintained that the diminution in the number of the lymphocytes following an exposure to radiation was a physiological process, and could occur after mental disturbance. He had obtained a similar diminution in rats which showed fright when exposed to the apparatus which was in operation without the production of radiation.

X Ray Diagnosis.

Dr. KNOX read a paper and showed lantern-slides to illustrate his method of X ray examination for gall-

stones and the results. He showed that these calculi could be recognised and differentiated from renal calculi by their more anterior position (shown in lateral view) and by their structure—the presence of greater density in their peripheral parts.

Mr. J. W. THOMSON WALKER (London) showed that injection of the pelvis of the kidney with opaque material via the ureter would give an indication of the position of the kidney and the relation of the latter to biliary and renal calculi and calcified glands. The description was illustrated by slides.

Dr. E. P. CUMBERBATCH (London) opened a discussion on

Surgical Diathermy,

calling attention to the forms of active electrode which were used. These did not cause destruction to a sufficient depth of malignant growths. Deeper destruction could be procured by using disc end-pieces provided with prongs 10 or 15 mm. long. It could also be obtained if the tissue in contact with the end-piece were prevented from drying. This could be done by allowing salt solution to drip slowly on to the tissue around the end-piece. If the growth were freely movable and an attempt made to excise it by the blade end-piece, he advised that it should be first coagulated in situ before excising it. After reference to the regions of the body to which the diathermic cautery could be applied for malignant growths, the after-effects, the complications that might occur, and the duration of freedom from recrudescence, he described his experience in the use of diathermy for lupus, hæmorrhoids, and pigmented areas of skin. The results were encouraging and he thought that a more extensive trial of the method should be made.

Dr. C. W. S. SABERTON (Harrogate) said that he had obtained excellent results in the treatment of nævi of the mucous membranes by diathermy. In malignant growths of the mouth and throat diathermy produced better results than surgery, and at Harrogate the newer method was preferred. He described a case of naso-pharyngeal sarcoma in which diathermy procured freedom from recurrence for a much longer period than excision by the knife. The use of diathermy for amputating the cervix uteri, for cauterising fungating growths of the anus, vulva, and perineum, for relieving pain of hæmorrhoids and vesical spasm, was described.

Dr. F. H. HUMPHRIS (London) contributed a paper on the treatment of papillomata of the bladder and of corns by diathermy. The treatment of the latter consisted in first wearing away the hard tissue with a revolving steel burr and then with an emery wheel. A moist compress is kept in contact with the corn during the night, and the following day the centre is cauterised by fulguration.

Dr. WILLIAM HILL (London) said that after cauterisation, by diathermy, of malignant growths cicatrisation of the tissues occasionally occurred. Shock also sometimes followed the operation. He wondered why radium had not been used for the case of sarcoma described by Dr. Saberton, as this agent produced such excellent results in sarcoma.

Dr. H. E. GAMLEN (Newcastle) remarked that he had obtained good results in the treatment, by diathermy, of nævi of the mucous membranes and of hæmorrhoids.

THE EXHIBITION.

An exhibition of surgical instruments, drugs, foods, and other products of medical interest, arranged by Mr. W. E. WARNE, was open from July 19th–22nd in the St. George's Drill Hall, St. Mary's Place. Lighting and arrangements were good, an efficient restaurant with string band was provided, but the ventilation was very defective and made the life of the exhibitors needlessly irksome. In the following account the exhibits have been grouped in subjects, the reference number to the stall and catalogue in parenthesis.

Medical books were remarkably well represented by the exhibits of E. A. Brooke-Williams, London (24), H. R. Ellis, London (64), H. K. Lewis & Co., London (13), Oxford Medical Publications, London (54), R. Waugh, Newcastle (22), and John Wright and Sons, Bristol (61).

Instruments.

There were five large exhibits of general surgical instruments: Down Bros., London (68), showed a collection of original models carried out at the suggestion of surgeons; J. Gardner and Son, Edinburgh (28), a number of instruments made in rustless steel; Mayer and Phelps, London (21), instruments for many special purposes including anæsthetics and clinical diagnosis; John Weiss and Son, London (5), a complete equipment for general and ophthalmic surgery; R. Whitelaw, Newcastle (12), up-to-date instruments along with a selection of splints, limbs, and boots. Special exhibits by Robert McQueen and Son, Newcastle (33), of instruments designed by surgeons on the staff of the Royal Victoria Infirmary, and the Genito-Urinary Manufacturing Co., London (60), of cystoscopes, urethroscopes, pharyngoscopes, &c.

Of scientific appliances, the Cambridge and Paul Instrument Co., London (37), exhibited an electrocardiograph, a Mackenzie-Lewis polygraph, a Woodhead-Varrier Jones recording clinical thermometer outfit; Hawksley and Sons, London (80), polygraphs by Mackenzie and Jaquet, sphygmomanometers, electrical diagnostic and anthropometrical instruments; Chas. Hearson and Co., London (63), electric incubators, all-metal wide range thermostatic ovens, autoclaves, myographs, and the like; Ogilvy and Co., London (45), microscopes, microtomes, epidiascopes.

Artificial Limbs and other Appliances.

A wide range of other appliances was on view including six exhibits of artificial limbs: Anderson and Whitelaw, Birmingham (70), a selection of light dress arms, workers' arms, and the implements for use with them; F. G. Ernst, London (71), specially concealed appliances for poliomyelitis, ununited fractures, and rheumatoid arthritis; W. R. Grossmith, London (72), arms and legs adapted to particular amputations; M. Masters and Sons, London (69), light Anglesea legs and other appliances; Peet, Gilman and Company, Newcastle (29), willow and light metal limbs in many forms; P. K. Arm, Belfast (75), a mechanical arm with gripping hand and safety leg with automatic knee lock.

Hospital beds and equipment including the Alton portable bed were shown by Hoskins and Sewell, Birmingham (2); a folding chair and sun-blind for sanatorium use by Institution Requisites Co., Birmingham (73); and fracture apparatus on portable tubular bed-frame, embodying the lessons of the war, by Robert Morison Edinburgh (35).

X ray outfits and tubes along with a handy "hot-point" immersion heater were in the exhibit of the British Thomson-Houston Co., London (62); materials for radiant heat treatment in that of the Dowsing Radiant Heat Co., London (36); radio-active applicators in standard sizes in that of the Kramer Radio Active Applicators, Birmingham (66); electrical aids for the deaf in that of W. H. Pettifor, London (59); and Edridge-Green lanterns and tests in that of Rayner and Keeler, London (41). Kodak (67) had an exhibit of X ray films and developing tanks.

Drugs and Chemicals.

Fine chemicals had a large place in exhibits by Brady and Martin, Newcastle (79), who made a point also of animal extracts, and by Phillips Spencer, Dakers and Co., Newcastle (40), along with crude drugs and compressed tablets. Pharmaceutical preparations were shown by Anglo-French Drug Co., London (56), galyl, ambrine, cuprase, dimol, &c.; Genatosan, London (53), sanatogen, formamint, detoxicated vaccines; C. J. Hewlett and Son, London (4), evapogens, veronigen, somnigen, &c.; Howards and Sons, Ilford (82), standard ether, agotan, optochin, &c.; W. Martindale, London (46), amyl nitrite, animal extracts, sterules, vaccines, &c.; Oppenheimer, Son and Co., London (1), palatinoids, pulverettes, roboleine, &c.; Parke, Davis and Co., London (47), metagen, hemoplastin, hormone preparations, phylacogens, &c.;

Savory and Moore, London (15), ethanesal, fructolax, datura tatula asthma remedy, &c.; W. A. Wharram, Leeds (55), pepsin preparations, concentrated mixtures, cascalax, laxatol, &c.; Wyleys, Coventry (50), antiseptic jellies, bromchloral, elixirs, wylettes, &c.

Single preparations formed the whole exhibit in the case of the Anglo-American Oil Co., London (30), nujol, an intestinal lubricant of constant viscosity; Clement and Johnson, London (43), yadil antiseptic (allylic carbide) as a liquid, ointment, soap, &c.; Crookes Laboratories, London (25), collosols, the physical characteristics visible under the ultramicroscope; Jeyes' Sanitary Compounds Co., London (42), cyllin, an antiseptic of high bactericidal power and low toxicity; Kress and Owen Company, New York (agents, Thomas Christy and Co., London) (14), glycothymoline, an antiseptic solution based on the alkalinity and saline strength of the blood; Pepsodent Company, London (38), pepsodent, a dentifrice with an acid reaction due to acid calcium phosphate; Wm. Browning Co., London (34), semprolin, a liquid paraffin of standardised viscosity.

Food Products.

Three milk products were shown: Hooker's malted milk (27) claimed to retain the vitamins and to be free from cane sugar and starch; Horlick's malted milk (48), a modified milk containing cereals in which the starches have been hydrolysed by diastase; Glaxo (39), a standardised and desiccated milk, used as a complete infant food. Chocolate was on exhibit by Cadbury Bros., Bournville (18); meat preparations by Brand and Co., London (44), with various essences and beef teas; and Oxo, Limited, London (49), with oxo, lemco, and other concentrated foods; yeast and malt preparations by Calder's Yeast Company, Newcastle (31). Special nutritive substances were on the stands of Mawson and Proctor, Newcastle (3), in the form of majax sugar of milk for humanising cow's milk; Numol, Newcastle (32), a lecithin food rich in vitamins, for use in rickets, marasmus, &c.; Sanagen Works, London (20), a casein-glycerophosphate combination in various forms; Virol (16), a preparation rich in animal fats, used in cases of malnutrition, also as virolax combined with paraffin. Wm. Gaymer and Son, Attleborough, Norfolk (17), showed samples of cyder for patients with gouty or rheumatic tendency.

Spas and Mineral Waters.

A series of six similar stands illustrated the attractions of British inland watering places—namely, Bath (6), with its daily yield of half-a-million gallons of highly radio-active water at 120° F.; Buxton (7), the mountain spa with warm radio-active mineral water at 82° F. and other chalybeate springs; Droitwich (8), with its brine baths containing more than 20,000 grains of salts to the gallon; Harrogate (9), with 87 springs, 16 used internally, divided into sulphur alkaline, saline, and chalybeate; Leamington (10), the Midland spa, with dry equable climate and a natural aperient and diuretic water; Woodhall spa (11), with its spring of water containing bromine and iodine in high degree. The Apollinaris Co., London (26), showed the sparkling table water of the Apollinaris spring and the gently purgative apenta water; Ingram and Royle, London (65), showed natural mineral waters, bottled and in tablet form, from English, French, and other foreign medicinal springs.

Miscellaneous.

Several exhibits touched nearly on the hygiene of the person and the home. The exhibit of the British Commercial Gas Association (76) bore on the abatement of the smoke evil; that of the British Electric Transformer Co., London (58), on the convenience of electric heating and cooking. The Cellular Clothing Co., London, showed the points of aertex material for health and comfort; Ronuk, Portslade, Sussex (52), the use of sanitary polish and floor materials; Sapon Soaps, London (51), the value of neutral saponified cereals in removing dirt and grease.

The Medical Insurance Agency (78) and the Medical Sickness, Annuity and Life Assurance Society (81), both had prominent exhibits.

Reviews and Notices of Books.

GOUT.

By LLEWELLYN JONES LLEWELLYN, M.B. Lond., Senior Physician, Royal Mineral Water Hospital, Bath. With a section on Ocular Disease in the Gouty. By W. M. BEAUMONT, Consulting Ophthalmic Surgeon to the South-Western Region of the Ministry of Pensions. London: William Heinemann, Ltd. 1920. Pp. 469. 30*s*.

IN reading the preface to his book it is realised that Dr. Llewellyn is a whole-hearted adherent of the view that an infective element plays an important part in the genesis of gout. In the body of the work he finds good reasons for dismissing rival theories as inadequate to explain the pathogenesis of this disease, but we have failed to find any allusion to the modern view that an attack of gout may possibly be an anaphylactic phenomenon. While holding that microbial infection is the causa causans of an attack of gout, the author admits that this infection would not produce the characteristic phenomena if there were not already a constitutional predisposition. "Gout," he says, "is an hereditary disorder, the *intrinsic* element of which is an inborn instability of nuclein metabolism which may remain latent, but under the influence of *extrinsic* factors, *infections*, become manifest, as betokened by local inflammatory tissue reactions in joints or elsewhere, the specific character of which is attested by the associated *uratic deposition*." Dr. Llewellyn is of the opinion that the presence of tophi "either clinically demonstrable or deducible from skiagraphic revelations," is the solitary unequivocal criterion for a clinical diagnosis of gout. Examples of non-tophaceous, deforming gout he believes to be largely made up of the atrophic and hypertrophic forms of arthritis deformans.

The first 200 pages of the book are devoted to a consideration of pathological and bio-chemical data and to a discussion of the various theories which have been put forward to explain the nature of gout. While not primarily of interest to the pure clinician, the fascination and lucidity of Dr. Llewellyn's style make every page worth reading. With Chapter XVI. we come to the excellent clinical account of the disease, the detailed consideration of which runs into some 50 pages. Five chapters dealing with clinical diagnosis, including skiagraphic results, then follow. The author is of the opinion that the resemblance between skiagrams of chronic gout and rheumatoid arthritis is so close as to forbid reliance being placed solely on skiagraphy to effect a differential diagnosis. Skiagraphy cannot be allowed to usurp the place of careful clinical observation. A delightful chapter follows on irregular gout, opening with Benjamin Rush's century-old dictum: "It is not a sacred disease. There will therefore be no profaneness in handling it freely"; counsel of which the author takes full advantage. Mr. W. M. Beaumont contributes a chapter dealing with certain ocular defects occurring in gouty subjects, and enters a plea for a more systematic and scientific investigation of the true link, if such exist, between iritis and arthritis. The final chapters are devoted to a consideration of treatment. While much space, as might have been expected, is given up to hydro- and climato-therapy, medicinal agents like colchicum, the iodides, atophan, come in for full attention. Colchicum and salicylate of soda act quickly or not at all. "Because of our unreasoning devotion, our almost fetishistic addiction, to these drugs, I often feel that these agents, especially salicylate of soda, have made more cripples than they have saved."

In spite of Dr. Llewellyn's views on the infective origin of the disease we notice that he devotes little space to vaccine therapy, to which there is only a single reference in the excellent index appended to the volume. It is only fair to say that radical treatment of local foci of infection and toxic absorption is duly insisted upon. Even should the reader be

unable to subscribe without reservation to the infective view so cogently urged by the author, he will read with satisfaction the publication of this scholarly monograph.

INGUINAL HERNIA, THE IMPERFECTLY DESCENDED TESTICLE AND VARICOCELE.

By PHILIP TURNER, M.S., F.R.C.S., Assistant Surgeon, Guy's Hospital. London: J. and A. Churchill. Pp. 104. 9*s*. 6*d*.

THE author who sets himself the task of writing a monograph upon hernia, the undescended testicle, or varicocele, has indeed a difficult problem in front of him. These common conditions are within the possibility of study of a multitude of men, and for that reason have always received an immense amount of attention and thought. If an individual is to add to knowledge he must be ingenious in his originality, or bring forward the after-results of a large series of cases, and it is by this high standard that we must judge such monographs. This volume of 104 pages contains much sound advice in the treatment of the average case, but it does not help the practising surgeon in dealing with just those problems in treatment which still await solution. In the treatment of hernia there is one principle upon which the author insists which does really seem of importance—the careful avoidance of injury to muscle fibres by dissection, or strangulation by suture. The observance of this more generally might well reduce the number of recurrences. We look in vain for guidance in the treatment of recurrent hernia, or of those cases in which the conjoined tendon is feebly developed; nor does Mr. Turner describe the recurrence which breaks through the inner end of the posterior wall of the inguinal canal after the cure of an indirect inguinal hernia, though it must have been his fate to deal with these difficult relapses. It would have been of interest to hear his views of the value of such measures as the transplantation of the rectus muscle, or its sheath, or the use of a fascial transplant.

Mr. Turner has gained more success in orchidoplasty than have most surgeons, and this he attributes to his careful division of fascial bands in the cord, and to the method of fixation of the testicle in the opposite side of the scrotum. We cannot agree that "it is certainly very unusual for there to be any difficulty in transplanting the testicle to the scrotum"; even after division of all fascial bands a certain proportion of testicles will not reach the scrotum without tension. His percentage of successes demonstrated—viz., 50—is a very creditable performance in this unsatisfactory condition. As for the varicocele operation the method of suspension is an advance, but here also an account of results would have made interesting reading.

THE SEX-COMPLEX.

Second edition. By W. BLAIR BELL, B.S., M.D. London: Baillière, Tindall and Cox. 1920. Pp. 251. 21*s*.

WE cordially welcomed the first edition of this book and are not surprised that a second has been called for. It is with regret that we note that the author does not intend to publish any further editions. That the labour of keeping such a book up to date is very onerous we have no doubt, but we cannot agree with him that "this is not the kind of book that can usefully be taken through numerous editions," for it will always require a skilled assessor to decide the relative importance of various new observations as they are made. The ordinary reader has neither the time nor the knowledge necessary for this and is apt to become confused both by the abundance of the material and the apparent discrepancies contained therein. Inasmuch as a beginning can now be made in forming generalisations, the opinions of such an assessor as Dr. Blair Bell will have special value, for it requires personal experience in original work correctly to evaluate the work of others.

It should be made clear that Dr. Blair Bell does not use the word "complex" in the psychological sense; his subject is the correlation between the female reproductive organs and the endocrine glands, and the way in which these interact with one another in health and disease. The essential fact, as he says, is that femininity itself is dependent on *all* the internal secretions. These profoundly influence both the psychology of the individual and the general metabolism, which in turn is influenced to subserve the necessities of the special functions. These aspects, metabolic and psychological alike, are discussed in an interesting and illuminating manner.

THE ENDOCRINES.

Sympathetique and Glandes Endocrines. By LEREBOUILLET, HARVIER, CARRION, and GUILLAUME. Being Vol. IX. of Traité de Pathologie Médicale et de Thérapeutique Appliquée. Paris: Maloine et Fils. 1921. Pp. 350. Fr.18.

FEW subjects in medicine are attracting more attention to-day than the relations between the sympathetic nervous system and the endocrine glands. This volume of the Traité de Pathologie Médicale et de Thérapeutique Appliquée is therefore specially welcome. After a general study of the endocrine glands the pathology of each is considered. Then follows an account of the anatomy and physiology of the sympathetic nervous system, and of its pathology. The last section deals with organotherapy. The diagrams we have found excellent; they make it easy to understand the arrangement of the sympathetic nervous system. The chapter on the pathology of this system might well have been amplified, and three pages would appear far too little to devote to the endocrino-sympathetic syndromes. Just as the nervous system as a whole was evolved both for internal integration and for directing the external life of relation, so the sympathetic, as the lowest level of the nervous system, directs the functions of organic life and activates the body for defence against the external foe. In the accomplishment of this task it has entered into an alliance with the endocrine glands, which represent a specialisation of the older chemiotropic methods of defence, and the essential feature of disease of the endocrino-sympathetic apparatus is that it is a perversion of the primitive defensive mechanism.

Individually the sections of the book are nearly all excellent, whilst defects are no doubt due to the fact that the different sections are from the pens of different authors. A chapter correlating them would have materially enhanced the value of the book as a whole.

TREATMENT OF DISEASES OF THE SKIN.

Third edition. By W. KNOWSLEY SIBLEY, M.D. London: Edward Arnold and Co. 1920. Pp. 248. 12*s*. 6*d*.

THIS book, which has now reached its third edition, contains some useful information, and a number of the prescriptions given are of real value. It is not, however, a scientific treatise, in spite of the fact that the author claims, in his preface to the first edition, that the treatments given "are thoroughly up to date" and "possibly in some cases a little in advance of many of the generally accepted principles of the present school of dermatology in this country."

Although some sound observations are made on the influence of diet and of abnormal conditions of the alimentary tract in the causation of certain skin diseases, the directions for internal treatment are too often as vague as the author's views on ætiology. Herpes zoster, we note, may be produced "by atmospheric changes, exposure to cold and wet, sudden checking of perspiration, traumatism, peripheral nerve irritation or injuries, pulmonary diseases, intestinal parasites, malaria, carbonic acid gas poisoning, arsenic, reflex nerve irritation, such as dental troubles, &c."; hyperidrosis "is probably due to faulty innervation," and Raynaud's disease "has followed cold, exposure, general disturbances of nutrition, severe systemic disease, various neuroses, and nephritic disorders." These excerpts are taken at

random, but we can forgive anyone who after reading them abandons dermatology in despair.

In Part 1, which deals with methods of treatment, X rays are given first place, and Dr. Sibley claims that "there are but few dermatological lesions which are not improved or cured with skilled treatment by the X rays." He apparently employs them even for dhobie itch. Apart from X rays, methods of treatment by radium, electrolysis, ionisation, high-frequency currents, vaccines, carbon-dioxide snow, hyperæmia, and baths are described. The great value of diathermy is rightly insisted on. To treat scabies "with radiant heat associated with sulphur inunctions" is perhaps carrying "modern" methods a little too far. In Part 2 the various diseases of the skin are dealt with in alphabetical order, and usually a number of alternative methods of treatment, some of them not very helpful, are given. The detailed description of a definite line of treatment of proved value, based as far as possible on an intelligent appreciation of the ætiology of the particular disease under consideration, would have been more useful to the student of dermatology than a list of methods which "may be beneficial," or "have been used." We read that "high-frequency currents have been tried" for lipoma and that "painting the tumour with liquor sodii ethylatis for two or three days might be of service in some cases." It might—but then again, it might not.

A number of very good photographs are included. Some of them illustrate the effect of treatment in such conditions as acne, alopecia, seborrhœa, and scarring. Advanced students will be interested in the excellent photographs of rare cases that have been under Dr. Sibley's care. It is a bold effort to attempt a manual mainly concerned with treatment in dermatology, especially as, in the author's opinion, the ætiology of so many skin diseases is obscure and their treatment therefore mainly empirical. The fact that Dr. Sibley's book has run into three editions shows that his endeavours have received a fair measure of appreciation.

INSANITY.

Manic-Depressive Insanity and Paranoia. By Prof. EMIL KRAEPELIN. Translated by R. MARY BARCLAY, M.B. Edited by GEORGE M. ROBERTSON, M.D. Edinburgh: E. and S. Livingstone. 1921. Pp. 280. 21*s*.

THIS is a translation from the eighth German edition of the "Text-book of Psychiatry," Vols. III. and IV. The larger part of the book is devoted to the development of Prof. Kraepelin's well-known conception of the merging of mania and melancholia in a single definite form of mental disorder. After the separation of exhaustion and toxic states from mania and their clinical description as confusional insanity, the occurrence of cases of true mania seemed to many observers to become rare. In this work, however, descriptions of mania are again including such disorders of perception, consciousness, and memory as are reminiscent of confusional states. At times a suspicion is roused that it is in fact toxic and exhaustion states in their very varying aspects that are being described. However, Prof. Kraepelin's case is a good one and is presented in a masterly fashion. His analysis of the temporal dissociation of symptoms affecting intellect, emotion, and volition during the course of a case of manic-depressive insanity is exceedingly interesting if not wholly convincing. Dr. Mary Barclay's translation is good, though very obviously from the German.

Lunacy in India. By A. W. OVERBECK-WRIGHT, M.D., Major, I.M.S. London: Baillière, Tindall, and Cox. 1921. Pp. 406. 21*s*.

THE general account of the various mental affections regarded from the psychological, pathological, and clinical aspects as they occur in India given by Major Overbeck-Wright is not very notably different from accounts of similar affections occurring in Europe. His classification is founded upon that of Dr. Lewis C. Bruce, and mania, melancholia, and delusional insanity are treated of as insanities of toxic origin. Descriptions of symptoms and treatment are lucid and adequate. Probably the most useful chapters are the medico-legal ones, and these alone should render the book of value to practitioners in India.

SURGICAL WARD WORK AND NURSING.

Fourth edition. By ALEXANDER MILES, M.D., F.R.C.S. Edin. London: The Scientific Press, Ltd. 1921. Pp. 418. 10*s*. 6*d*.

THIS handy-sized volume, now appearing in a fourth edition, is a useful and concise compendium for a nurse to read and refer to during her training, and whilst working in a surgical ward. It covers the whole field of knowledge required by the surgical nurse, though some parts are more thoroughly dealt with than others. The information is up to date and for the most part judiciously selected. 393 illustrations are included. Since it is likely that further editions will be called we note a few errors and omissions. No mention is made of Irving's apparatus, now so commonly used for draining the bladder. The only form of gastroscope mentioned is a flexible one, though a rigid tube (e.g., that of Hill or Jackson) has for some years been the more common, if not the only, form used. Clover's and Hewitt's inhalers are figured and described, but not named. The segregator devised by Luys is attributed (both in the index and under the illustration on p. 247) to Leaws. On p. 394 are two illustrations of Thomas's knee-splint which are wrongly labelled "Caliper Splint"; to these illustrations we could find no reference in the letterpress. Fig. 377 portrays Jones's elbow-extension splint, but it is described as a "Splint for the forearm." Fig. 348 is neither named nor mentioned in the text. The type of cholecystectomy forceps attributed to Moynihan in Fig. 149 is certainly not the usual form now recommended by him. For treatment of secondary hæmorrhage after excision of the tongue the nurse is told to hook the tongue forwards "so as to compress the arteries against the lower jaw." Surely the efficacy of the method of dragging forward the stump of the tongue does not depend on this.

These minor errors, however, detract but little from the value of the book, which would certainly constitute a useful guide to one designing a course of surgical lectures to nurses.

THE ELEMENTS OF VEGETABLE HISTOLOGY.

By C. W. BALLARD, Associate Professor of Materia Medica, College of Pharmacy, Columbia University. New York: J. Wiley and Sons. 1921. Pp. xiv. + 246. 18*s*.

Vegetable histology is a subject of much importance to students of pharmacognosy and food analysis, and a clear exposition of the fundamental facts and methods is needed by those who are beginning the study of this subject. Mr. Ballard in attempting to produce such an exposition has cut down the subject matter as much as possible so as to avoid the inclusion of numerous confusing details, but has not shown much judgment in his selections of matter. His book is divided into 19 chapters, of which four deal with the microscope and its accessories, and the preparation of material; two other chapters describe the chemical reactions of plant tissues and the use of stains, while the remaining 13 deal with the structure of the various plant organs. In a book of this kind the inclusion of so much matter relating to microscopes and their accessories seems rather out of place, since such information can be better obtained from books on physics or from special works upon the microscope as an instrument. A similar criticism applies to much of the general botanical anatomy of leaves, roots, stems, &c., which can be better learnt from text-books on botany. The illustrations are

crude, and some of them are quite misleading, as, for example, Figs. 3 and 4 on Plate 44, purporting to represent sections through a stoma and a lenticel respectively, and Fig. 3 of Plate 46, intended to represent the laticiferous vessels (described as "tubes") of taraxacum root. The careless drawing on the 69 plates is sufficient in itself to mar the value of the book as a guide for the beginner. Moreover, that the information given is not always trustworthy may be seen from the following quotation (p 129): "Closed collateral bundles consist of a xylem portion and a phloem portion separated from each other by a short strip of cambium, the whole being surrounded by a sheath or layer of fibrous tissue."

CHEMISTRY.

A System of Physical Chemistry. Vol. II., Thermodynamics. By W. C. McC. LEWIS, M.A., D.Sc. London: Longmans, Green and Co. 1920. Pp. 454. 15*s*.

THIS volume is one of the well-known series of text-books of Physical Chemistry edited by the late Sir William Ramsay and Prof. F. G. Donnan. Thermodynamics deal with the laws and relationships which govern the quantitative transformations of energy of one sort into energy of some other sort during physical or chemical changes in the system. The characteristic feature of this extremely interesting and important branch of physical chemistry is that one can deal with energy changes involved in a physical change of state or in a chemical reaction without requiring information regarding the molecular mechanism of the process under investigation. The school of physical chemistry, notwithstanding the eloquent criticism of Prof. H. E. Armstrong, is an ever-increasing force in this country, and Dr. Lewis's work will doubtless be regarded as a real contribution to a subject which to the non-expert appears highly mathematical and complicated.

Applied Chemistry. A Practical Handbook for Students of Household Science and Public Health. Vol. I. By C. K. TINKLER, D.Sc., and HELEN MASTERS, B.Sc. London: Crosby Lockwood and Son. 1920. Pp. 292. 12*s*. 6*d*.

ALTHOUGH it would appear that this volume is primarily intended for those students who are reading for the Diploma in Household and Social Sciences recently instituted by the University of London, yet it deserves a better fate than to be regarded simply as a text-book associated with a particular academic institution. The subjects dealt with are water analysis, water softeners and "soda" substitutes, soap, textile fibres, bleaching agents, dry cleaning, air analysis, gaseous fuels, liquid and solid fuels, and materials used for the protection of wood, metal, and other surfaces. The ground the authors have covered is considerable, but nevertheless their treatment of it is well balanced and the selection of experiments wisely conceived. Portions of the volume may well be read by students preparing for diplomas and degrees in public health.

MY LADY'S GARDEN.

Planted and Grown by HACKLEPLUME. London: Watts and Co. 1921. And from Hackleplume, 120, Grosvenor-road, S.W. 1. 25*s*.

THE author closes a sumptuous gift-book with an apostrophe to "The Tortoises who Dwell in the Waters of Lethe," in which she appears to plead for any notice rather than no notice. By the help of the index, which the reviewer—i.e., the Tortoise Who, &c.—is requested to read for the better understanding of the "garden," we gather that the verses are a tribute to all soldiers, sailors, and civilians who took part in the war. The work is divided into 19 sections, each section dealing with a different arm of the forces, or geographical unit, and throughout the verses the names of officers and men are associated with particular flowers, the reasons, given in the footnotes, being calculated sometimes to raise blushes on the cheeks of modesty. The reason for sending the book for review to THE LANCET is that one of these sections is entitled "The Physic Garden," and here various officers of the R.A.M.C. are noted as camomile, vanilla, genista, and so on.

Hackleplume is not a poet, but she is evidently full of her theme, and amidst passages of triteness, triviality, and slanginess happy lines occur. She has felt the splendours and tragedies of the war deeply, and has striven to give expression to the emotions evoked. It would not be fair to criticise more closely a work whose inspiration has been a blend of pity and patriotism. The book is illustrated by Miss Marjorie Raynor in the decorative style of flower painting which delighted the public in the middle of the nineteenth century. None of the flowers are drawn to scale, and profound liberties are taken with their hues, but the patterns made are decorative, and the technique is quite dexterous. The reproductions are good.

JOURNALS.

Journal of Industrial Hygiene. London: Macmillan and Co., Ltd. 4*s*.—Output continues to be studied as a measure of human activity. The May issue of this Journal contains an article of some interest in which the influence of tobacco upon physical efficiency is measured by this means. The process studied was that of blowing glass by machinery, during which moulds are fed with "gobs" of molten glass by a man who gathers the required amount from a furnace. The number of "gobs" gathered hour by hour throughout the day were counted, allowances being made for their size. Then the work of heavy smokers, light smokers, non-smokers, and of those who chewed tobacco was compared. Smoking was found to have little effect upon the rate of output in this occupation, which calls for strenuous physical exertion. Indeed, the light smokers had a slightly lower rate of output than heavy smokers. Chewing, on the other hand, was found associated with a definitely lower rate of output. The conclusion with regard to smoking is curiously at variance with the accepted tradition of athletes, but the data upon which it is based are substantial enough to merit consideration.—Appeal is made in the July number by Dr. H. M. Vernon to morbidity and mortality records as measures in estimating the influence of fatigue on health and longevity. Dr. Vernon's paper deals exclusively with the English iron and steel trade, in which he has carried out an extensive investigation. The sickness experienced in this industry is due for the most part to respiratory affections and forms of rheumatism; older men from 55 to 69 years of age were found to lose 6·5-fold more time from rheumatism than younger men of 16 to 29, an excess which was more marked among those working at high temperatures, where the older steel melters and pitmen lost no less than 7·7-fold more time than the younger men. Older engine men, on the other hand, lost only 3 to 5-fold more time from rheumatism than younger men. The tables given are held to establish that exposure to weather is causative of excessive sickness from rheumatism and respiratory diseases. Mortality data were found to support closely the conclusions drawn from morbidity records; here an interesting fact emerges: that exposure, such as working in the open air, which may increase the risk of respiratory diseases in general, may actually reduce the tendency to phthisis. In this excellent study Dr. Vernon sees reason to conclude that in men of good physique the fatigue of heavy work has but little direct effect on sickness and longevity, and that the heavy work of iron puddlers, of tinplate mill men, and of rolling-mill men, has no injurious effect on health except indirectly, when it induces men to sit about in damp clothes. This conclusion, that the harmful conditions of the occupations studied depend rather upon environ-

mental conditions than on the amount of physical energy expended, is one of no little importance and of hope. Physical exercise is necessary in industrial work, and cannot well be avoided; environmental conditions, on the other hand, are capable of amelioration.—Dr. Alice Hamilton contributes in the May number an excellent summary and discussion of the position relating to malignant tumours of the bladder among aniline workers. The summary of evidence is a valuable one, and the case put forward for considering that arsenide of hydrogen may be the substance at fault is of interest. The case would be stronger if evidence was forthcoming that operatives exposed to arsenide of hydrogen in other industries, apart from the dye industry, suffered in the same way. Much more light is needed on this subject; just as it is upon the occurrence of cancer among chimney sweeps, briquette makers, and smokers, all of whom are exposed to products of distillation of vegetable matter. Some substance or substances are present which seem to possess the power of sensitising the tissues to malignant growth. More definite information might help to elucidate the whole obscure problem of malignancy.—Two articles dealing with poisons which may cause toxic jaundice have appeared; one in the May issue, by Dr. D. C. Parmenter, is concerned with tetrachlorethane poisoning as seen in an American plant making artificial silk, in which this volatile hydrocarbon is used as a solvent for cellulose. Exposure to fumes seems to have been well controlled, so that no fatalities or serious cases of jaundice have occurred, but a number of cases of minor illnesses are reported. Abnormal fatigue, discontent, general nervousness, loss of appetite and sleep, are the early symptoms reported, while later nausea and sickness, with abdominal pains and possible jaundice, may occur. Blood abnormalities were always found to be present, including (1) an increase, up to 40 per cent., of large mononuclear cells; (2) a slight elevation of the white count; (3) progressive but slight anæmia; and (4) slight increase in platelets. The presence of a considerable number of young mononuclears distinguished the severer cases. Dr. Parmenter holds that if sufficient care is taken to remove by suction draughts the fumes of tetrachlorethane, and if careful medical supervision is instituted, the use of tetrachlorethane commercially is feasible without undue risk to the workers; he lays considerable stress upon the importance of blood examinations for detecting early cases. The second article deals with T.N.T. poisoning, and is referred to elsewhere in these columns.

Wiener Archiv für Innere Medizin. Edited by W. FALTA and K. F. WENCKEBACH. Vol. II., Part 3. Pp. 357–633. June 30th, 1921. Berlin: Urban and Schwarzenberg. M.102.—Osteoarthropathy in Carcinoma of the Lung, by Priv.-Doz. Dr. Maximilian Weinberger. A full clinical and post-mortem report is given of a male patient, aged 62, in whom symptoms due to the bone changes of osteoarthropathy developed nearly two years before the clinical signs of disease of the lung (primary bronchial carcinoma) were evident. The bone changes were so widespread and the enlargement of the extremities so marked that the patient was admitted to hospital with the tentative diagnosis of acromegaly. Skiagrams of the forearm and knee, and a photograph of the femur after its removal on post-mortem examination complete the communication.—Acquired Hæmolytic Jaundice (Widal-Abrami), by Priv.-Doz. Dr. Hans Pollitzer, Drs. Hans Haumeder and Stefan Schablin. The pathogenesis of acholuric jaundice and the relation of the acquired to the familial or congenital forms is discussed at length. Illustrative cases are given, and in two of these the diagnosis is made in the absence of an increased fragility of the red blood corpuscles. The authors give their reasons for the view that the disease is due to dysfunction of the spleen.—Vascular Spasm in Intermittent Claudication and Reference to Certain Capillaromotor Phenomena, by Priv.-Doz. Emil Zak. The author demonstrates the important symptoms of intermittent claudication in the normal upper extremity by depriving the limb of its blood-supply by pressure on the brachial artery simultaneously rapidly clenching and unclenching the fist some 30 times. He thus explains the vascular spasm and ischæmia in intermittent claudication as the result of a normal reflex called into action by the deficient supply of blood to the part. The nature of the stimulus that provokes this reflex is discussed, and reference is made to the clinical aspect of recent physiological work on capillary tone.—Contributions to the Clinical and Pathological Study of Tetany, by H. Elias and E. H. Spiegel. The authors find an increased phosphorus content in the blood serum in various types of human tetany. The inorganic phosphorus accounts for this increase in the total, the lipoid phosphorus being unaltered. The increase is generally more marked in severe cases, and it does not appear to be determined by muscular spasm. They maintain that it is an important symptom, and possibly an ætiological factor, in tetany.—Blood Pressure in Diabetes Mellitus, by Dr. K. Hitzenberger. The blood pressure in 97 cases of diabetes was recorded and compared with that of 561 patients suffering from ailments not likely to influence blood pressure. The author found the average blood pressure lower in diabetics under 40 than in the control cases, while in diabetics over this age it was higher than in the control series.—Hæmorrhagic Nephritis and Tuberculin Hypersensitiveness, by Doz. Dr. A. Müller-Deham and Dr. Kuno Kothny. Ten cases of acute nephritis are reported in which von Pirquet's skin reaction was strongly positive. In no case was there any sign of active tuberculosis, but there was clinical evidence of "latent" tuberculosis in all cases. This last statement is based on the presence of impairment of percussion note at the apex or hilus of the lung, or on signs of old pleurisy. The authors claim to have cured six of their patients and improved four by the subcutaneous injection of Koch's old tuberculin and bacillary emulsion. With one exception of 26 weeks' duration, the average duration of illness before admission was 1½ weeks, and the average period of treatment was 2½ months. In the success of the specific therapy they employed they find support for their view that hypersensitiveness to tubercle toxins is an ætiological factor in many cases of acute and chronic nephritis.—On the Pathology of Dyspnœic States, by Priv.-Doz. Dr. Leo Hess. The author gives a clinical account and post-mortem findings in the case of four patients who suffered from heart failure and paroxysms of dyspnœa. As a result of his observations he comes to the conclusion that the dyspnœa in these cases was neither cardiac nor cerebral in origin, but rather due to vascular spasm occurring in the pulmonary circulation.—On the Inter-relation of the Composition of the Blood and Hydrochloric Acid Secretion by the Stomach, by Dr. M. Leist. Observations are made from the point of view of the effect on the blood content of chloride and water of variations in the secretion of gastric juice; and, per contra, the effect on the secretion of gastric juice of variations in the protein and water content of the blood.—On the Nervous Origin of Gastric and Duodenal Ulcer, by Dr. Stylianos Jatrou. It appears that the nervous system is not the cause, but rather a factor in the causation of gastric and duodenal ulceration.—Pathology of the Secretion of Bile, by Dr. Hermann Beth. The author describes a method for the quantitative estimation of bile salts. The contents of the duodenum containing freshly secreted bile are collected by a duodenal tube, and the results given are based on the examination of 24 patients suffering from various diseases of the liver.—On the Pathology of the Lungs (Part II., Cardiac Dyspnœa), by Prof. Hans Eppinger and Dr. Walter Schiller. The carbon dioxide combining power of the blood is taken as the index of its "acidity." The acidity of venous and arterial blood in healthy persons and in patients with heart failure is compared; the observations are

repeated after exertion. Their figures show that the dyspnœa in uncompensated heart cases cannot be entirely explained in terms of an increased acidity of the arterial blood. Neither can the dyspnœa be explained in terms of an altered content of oxygen and carbon dioxide in arterial blood. These negative results lead to the hypothesis that cardiac dyspnœa is due to reflex stimulation of the respiratory centre, brought about in part by venous stasis in the pulmonary circulation, and in part by an increase in the carbon dioxide in the alveolar air.

Reports and Analytical Records.

(1) "WELLCOME" BRAND ANTI-PNEUMOCOCCUS SERUM, TYPE 1; (2) "WELLCOME" BRAND AGGLUTINATING SERUM, PNEUMOCOCCUS, TYPES 1, 2, OR 3.

(BURROUGHS, WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C. 1.)

1. THE therapeutic serum is issued in phials of 25 c.cm. for use in cases of pneumonia caused by pneumococcus Type 1. The makers state that the usual practice is to give 50 to 100 c.cm. intravenously as soon as Type 1 pneumococcus has been identified by one of the usual methods. The mouse method and the culture-tube method are described. This determination is a necessary preliminary to treatment, for no benefit can be expected from this serum in cases of pneumonia, where the causative agent is Type 2, 3, or 4. The intravenous injection can be repeated twice a day until definite improvement occurs, an average case receiving from 200–500 c.cm. in all. Since symptoms of shock have been known to follow the intravenous injection of serum some clinicians prefer to test the patient for sensitivity by a preliminary subcutaneous injection. Both methods of procedure are described by the makers of the serum, who state that favourable results have been obtained in America from its use. It has long been recognised that the intoxication symptoms in lobar pneumonia are frequently out of all proportion to the extent of the pulmonary involvement. The degree of pyrexia, the distressing insomnia, the dangerous cardiac failure are all suggestive of a toxæmia, and it is quite conceivable that good might result from the use of a neutralising anti-serum, given with the object of assisting the patient until from his own tissues the protective bodies have been elaborated.

2. These agglutinating sera for use in type diagnosis are issued in phials of 1 c.cm. with full instructions as to the technique required for their use. The mouse method could hardly be pursued by a practitioner unless he had a licence for vivisection, but for the culture-tube method the provision of a suitable nutrient broth would be a not unsurmountable difficulty.

IRISH WHISKY.

(DUNVILLE AND CO., LTD., BELFAST.)

Two samples of whisky have been submitted to us for analysis, one being described as "Fine Old Whisky V.R.," and the other as "Special Liqueur." The following analytical data were obtained:—

	V.R.	Liqueur.
Proof spirit, per cent.	70·4	71·3
Total extractives, per cent.	0·039	0·1
Mineral matter, per cent.	0·009	0·005
Organic extractives, per cent.	0·03	0·095
Secondary constituents:—	Parts per 100,000 of absolute alcohol.	
Volatile acid (acetic)	11·75	16·0
Furfural	2·0	1·1
Esters	6·1	5·1

A general consideration of these figures shows that the liqueur brand is a pot-still whisky and the V.R. probably a blend. This is borne out by the slightly higher aldehyde content of the liqueur whisky, whilst the relatively high volatile acidity in both samples is evidence of a proper degree of maturation. Both are free from acrid flavour, the liqueur brand being particularly smooth, pleasant, and characteristic of the highest grades of Irish whisky, whilst the V.R. maintains the odour and flavour associated with this brand. The deleterious qualities associated with the presence of furfural are practically non-existent, as indicated by the small trace of this compound present. These whiskies were analysed by us in 1908 and 1914, and in spite of the lower alcohol content now enforced there is no falling-off in their good qualities.

QUININE ETHYL CARBONATE (EUQUININE) AND DIQUININE CARBONATE (ARISTOCHIN).

(CHEMICALS AND BY-PRODUCTS, LTD., THE COOPER LABORATORY, WATFORD.)

We have received specimens of these two quinine derivatives. The quinine ethyl carbonate is of good appearance, tasteless, and melts between 92° and 94° C. It is a pure and high-class preparation. The diquinine carbonate, or "aristochin," is colourless, tasteless, and melts at 183–4° C. It gives, however, a positive chlorine reaction, and analysis shows it to contain 6·9 per cent. of chlorine; the product cannot therefore simply be carbonate of diquinine. In a previous issue (June 18th) we stated that the S. H. M. Co. were the sole makers of quinine ethyl carbonate in this country. Chemicals and By-Products, Ltd., inform us that this is not correct, as they have made this quinine salt for the past two years.

TAWNY PORT.

(CHAS. TUCKEY AND CO., LTD., 3, MINCING LANE, LONDON, E.C.3.)

When analysed this wine was found to have the composition—

Alcohol	19·3 per cent. (equivalent to 33·6 per cent. proof spirit)
Total extractives	8·6 per cent.
Containing mineral matter	0·22 ,,
,, sugars	7·6 ,,
Fixed acidity (tartaric)	0·41 ,,
Volatile acidity (acetic)	0·05 ,,

The sugars consist of a mixture of dextrose and lævulose, the latter predominating. Cane sugar is absent. These analytical figures support the opinion that this is a well-made and sound wine, conforming to the type of a good port.

NUVITA DIETETIC BISCUITS.

(GEORGE HERBERT, LTD., GLASGOW.)

Each biscuit weighs 6·5 g., and is divided into two portions of approximately equal weight; the bottom part consists of ordinary biscuit material and above it is superimposed a light-brown, very sweet layer of a thick, slightly pasty consistency. Each biscuit is wrapped in silver paper and when eaten is agreeable to the palate. The two portions were examined separately. As might be anticipated, there is no evidence of the bottom (baked) portion possessing any enzymic activity; the top, however, has a slight liquefying action on starch paste and converts a portion of this starch into sugar. It would appear to consist of a diastatic preparation mixed with wheat flour and some dead yeast cells. The manufacturers claim that the "active" or top layer is composed of materials containing vitamins natural to the wheat berry and also those added from another source. The biscuits are stated to be suitable for convalescents and others of weak digestion. Care and thought appear to have been directed to the manufacture of these biscuits, which are novel in character, and if the claims are substantiated they may be useful in a number of conditions.

ONE of the two offices of Master of Lunacy having been rendered vacant by the death of Sir David Brynmor-Jones, the Lord Chancellor has decided to act on the recommendation of the Royal Commission on the Legal Departments with reference to the suppression of one mastership, and no new appointment will be made.

THE LANCET.

LONDON: SATURDAY, AUGUST 20, 1921.

The Famine in Russia: An International Menace.

THE terrible conditions of disease and death associated with the famine in Russia have been made known to everyone through the whole press of Europe, and the menace to international health, which is clearly indicated, has led to many questions as to what methods, if any, of control are being employed. In particular those unaware of the present position of the League of Nations inquire why some international health bureau, under the League, is not able to bring the coöperative power of medicine to bear upon the evil. Alas, the answer to this question is as easy as it is painful to give. The international bureau of the League is not as yet instituted; constituent powers may be able to use some of the machinery and resources of the League in the fight against disease, but the full power of international coöperation is wanting. An admirable scheme for an International Health Office of the League was laid before an international health conference in London 18 months ago, and was adopted last December by the Assembly of the League, but the organisation designed has never been able to secure existence. The scheme, it may be remembered, proposed the setting up of an international health office, under the League of Nations, to consist at the outset of delegates appointed by all the Governments represented on the Committee of the Office International d'Hygiène Publique, and by other powers, not co-signatories of the Office International but adherents of the League, with a competent executive. If this scheme had materialised a fine vista of international health would have been opened, medicine taking its place as the one great thing whose international character can never be disputed. The necessary unity of design and purpose was, however, absent; the scheme has not matured, and the attitude of the Government of the United States towards the League of Nations makes perseverance in this direction for the time useless. Meanwhile, when confronted with so great and pressing an international problem as the organisation, erection, and maintenance of a sanitary cordon on the Russian frontiers, the League has only been able to give partial assistance by means of an Epidemic Commission maintained, in the name of the League, by the voluntary contributions of a certain number of Governments. This Commission, though it has done excellent work within the limits of its resources, has now nearly exhausted the relatively small amount of money and material which has been placed at its disposal by these Governments, and by the central Red Cross agencies.

The Imperial War Relief Fund issued last week a moving appeal to the nation for subscriptions to the Russian Famine Relief Fund, and in a few eloquent sentences presented to the public a picture of terror and misery unparalleled in the history of the world. The numbers of the starving population, estimated at ten millions, make relief appear hopeless, but money must be sent to save what can be saved. From this appeal we learn that once again, as the miserable wandering masses move and scatter, there is the risk that they will carry with them the epidemics that follow hunger, and the diseases which are known to be present among them. Coincidently with this great disturbance of population and spread of infection is a stream of western migration, due to the hastening out of Russia of the large masses of non-Russian populations—particularly Polish—which are now arriving or expected on different parts of the frontier from Riga to the Bosphorus. It is against this risk that the nations of Europe must help themselves and must make what individual and coöperative efforts they can. Warsaw should be one of their principal objectives, as it is to or through Poland that infection is most likely to be carried. Now much can be done in Poland. Dr. NORMAN WHITE, Chief Commissioner of the League of Nations for Epidemic Diseases, has recently paid, in the company of competent international advisers, a visit to Warsaw, and is able to report that the Government of Poland is taking vigorous steps to succour the immigrants and to protect their own country and the rest of Europe from mass infections. The gates of entry are not numerous and can be watched, if adequate assistance is given to the local machinery. The Polish Government has had a sad experience in face of disease and has learned the lesssons well. Just two years ago Poland was visited with serious outbreaks of typhus. At that time a small international committee, formed at the instance of the new League of Red Cross Societies, went out to Poland, and gave advice from the personal experience of a well-chosen personnel on the direct ways to prevent and combat epidemic disease, and there is no doubt that Poland is determined to carry on the sanitary battle in defence of Europe. The Polish health authorities have fought typhus with energy and success, and Warsaw remains an excellent nucleus from which measures for the stay of the epidemic diseases may be put into action. What has been shown to be practicable in Poland should be equally feasible in the other border states of Soviet Russia.

The three diseases most feared are typhus, cholera, and plague, but plague, which requires for its propagation the intermediary assistance of rats, is the least likely to assume epidemic proportions, assuming that we are spared the pneumonic variety. If properly handled, the extension of cholera may be checked as easily as that of typhus, for, while the former disease diagnoses itself so that the patients do not easily escape the sanitary cordon, typhus, with its obscurer manifestations and longer incubation period, may escape detection. All medical eyes are turned anxiously towards Geneva, where measures of relief are being settled, and among them the important question of strengthening sanitary precautions in the border States, particularly by extending the work of the Epidemic Commission of the League of Nations. All countries should do what they can to find money and men to organise something in the nature of international effort against an international menace. Moreover, should infection spread, it is the bounden duty of all nations to recognise the liability of their conventions to make international notification of their outbreaks of disease. There must be no more concealment such as has taken place, for example, at different times at Lisbon, Paris, and Marseilles.

Histological Illustrations.

WITHIN about the last 25 years photomicrographs as illustrations of microscopic objects have come into use, and there is a growing feeling that they are not fulfilling their promise, and that facility of production is leading to their abuse. The objections to them are particularly obvious when

the subject is a histological section, especially with a magnification approximately equivalent to that given by a ⅛ inch objective and a medium ocular. Many such photographs are published in medical journals and most convey very little information to anyone who is not familiar with the appearances which it is sought to represent. The chief difficulty arises from the fact that the photograph reproduces only a single plane in the section, whereas visual examination is—or ought to be—always accomplished with a twiddling of the fine adjustment which gives a synthetic picture of the many planes into which an ordinary section can be divided. Practically also the absence of colour is a substantial defect, and it is unfortunate that while high-power colour photographs can be easily taken, no technical journal can afford to reproduce them regularly. The main claims that are made in favour of the photomicrograph are two in number. The first is that it reproduces what is actually there. This is illusory in so far as it fails to recognise the possibilities of altering the whole appearance and apparent nature of the details by altering the conditions of illumination, screening, and other technical minutiæ; photographs put forward as proof of the existence of some histological fact are open to the same critical consideration as those which purport to demonstrate the material existence of the spirit. Adequate investigation of microscopical appearances which are in dispute can be made only on the specimens themselves; for these no sort of photograph can be substituted. The second point is that photomicrographs are easy to do. This is undoubtedly true, for it is difficult to avoid getting some sort of result, and first-rate pictures are within the compass of most people. Indeed, the facility with which a process, still holding some of the glamour of the mysterious, can be put through has done much to encourage the "camera fiend" element in our histologists.

The alternative to photographs is drawings. No one can doubt their essential superiority who will compare the illustrations in, e.g., MACCALLUM'S "Pathology," with those in, e.g., BEATTIE and DICKSON'S admirable text-book, and set himself to make out what the various black and grey marks on the paper mean. Drawings are commonly thought to be impracticable because of the time and artistic skill required, and undesirable because the original appearances have been through the uncertain mill of human judgment and interpretation. As a matter of fact, failing the original specimens, what the reader wants to know is, not what is there according to the camera, but what the author thinks is there; in the text we want the author's interpretation of what he has seen and the same is true of his illustrations. Drawings truly take much longer; a fairly elaborate picture may represent a fair day's work. But it is worth very much more than the photograph, so that two or three well-chosen pictures may go further to explain a subject than a dozen or more unintelligible photographs. And the technique of making good drawings is not very difficult to acquire. There is no need to keep a "Professor of Art as applied to Medicine," as is done at Johns Hopkins. It is not derogatory to the dexterity of Dr. E. H. KETTLE, Dr. G. W. NICHOLSON, and Mr. G. A. PANNETT to hope that others may emulate them and publish with their papers illustrations from their own drawings which really do illuminate the sections they have cut and the philosophy with which they have examined them. Let us therefore hope that the art of histological drawing will find more adherents, and that photomicrography may be relegated to its useful sphere—say, of reproducing appearances under quite low magnifications, where the labour of a drawing may become immense, or of picturing bacteria, blood corpuscles, and other objects with a negligible thickness and definite outlines.

The Objective Study of Neurosis.

THE subject selected by Dr. F. L. GOLLA for his Croonian lectures before the Royal College of Physicians of London, three of which have been published in recent issues of THE LANCET and the fourth in the present issue, is one which must make a direct appeal to all who desire insight into the significance of that much-misused epithet "neurotic." Too often the physician is compelled to mask his ignorance of the precise nature of a patient's affection by relegating it to the ill-defined and ill-demarcated group of "neurosis," and notwithstanding the immense strides that have been made in neurological and psychological diagnosis exploration of the objective aspect of functional nervous disease has certainly not proceeded pari passu with that of the subjective. For the moment, indeed, such nervous disorder as is apparently sine materie has been passing to some extent into the hands of the practising psychologist and the professional psychotherapist, whose argument that psychological disease should be cured by psychological methods is perfectly legitimate and whose therapeutic successes are, at least in many instances, as striking as any obtained in other fields of medicine. Dr. GOLLA, it will be seen, approaches his subject exclusively from the physiological standpoint, and deserves every credit for his bold endeavour to call a halt to the rush of purely psychological investigations with which the study of neurosis is like to be inundated. If we understand his position rightly, he would have it that the abnormal psychical reactions of the neurotic are themselves but symptoms, and are not the cause of anything but rather the result of something. That something is "a physical disturbance of mechanism," constituting the primary factor in the neuroses; a physical disability, a "failure of organic equilibrium" is the cause of the neuropathic condition and the necessary precedent to its manifestations.

There is, of course, no actual novelty in the contention. For that matter we have been told recently by FREUD himself that "the structure of psycho-analysis that we have erected is really only a superstructure which at some future time must be placed upon its organic foundation, but what this is we do not know as yet." Relying to a considerable extent on war experiences, the controversies arising out of which are evidently far from being at an end, Dr. GOLLA stresses the point that exposure to similar if not identical conditions has never resulted in the development of neurosis in all thus exposed; not all, who would, can or will become hysteric, neurasthenic, or whatever it be. Patently some other factor enters into the matter. The physician who believes in the psychogenic origin of the major part of the neuroses of war also admits the existence of an antecedent element, constituted by a specific hereditary predisposition; and yet this will not engender a neurosis in a given case of difficulty of adjustment to war conditions unless and until, as has been frequently emphasised, the unconscious motive or motives to which weighty psychological import is assigned have revived and reinforced wishes that have been repressed in older, pre-war, unresolved conflicts. There may, indeed, be little evidence of any specific hereditary predisposition, though Dr. J. M. WOLFSOHN, working with Sir FREDERICK MOTT, obtained a history of family or individual neurosis in a very high percentage of all war neurotics, and there may be little proof that anything

else than the current difficulty is at the bottom of the functional disorder. However this may be, for want of a better term, the psychologist accepts the "constitutional" factor in such cases, and if the percentage of neurosis among the combatants in the war was not notably higher than among the civil population in times of peace, war strain is in a sense negligible compared with this pre-existing constitutional inability to deal with psychical conflict. For Dr. GOLLA it is an "organic disability," so apparent that the medical observer should have found little difficulty in spotting the future cases of neurosis before ever a shot was fired. A praiseworthy attempt was made by the American Army medical authorities to weed out presumptive neurotics during their recruiting days by resort to an expert psychological and physical examination and not a few misfits were duly eliminated, but if Dr. GOLLA's views are corroborated we should have at our disposal a means of detection which is bound to result in greater military efficiency if it can be employed.

When we turn to consider the evidence adduced for the reality of this organic disequilibrium and the forms in which it expresses itself we confess to a certain feeling of disappointment, though the difficulties in the way of reaching practical conclusions are considerable, and much that Dr. GOLLA advances by way of experimental illustration is peculiarly suggestive. Micro-chemical changes in nerve-cells, possible evidence of defective oxidation processes in them, are believed to be the underlying physical basis of nervous asthenia, which is a common symptom in some of the neuroses. In another group associated with signs of overaction of the thyroid gland the mechanism of emotion is hyperexcitable as evidenced by the behaviour of the galvanic reflex, the rate of basal metabolism is increased, and the sympathetic system can be shown to be over-irritable. Another type of neurosis is distinguished by the ill-adaptation of primitive instincts and conditioned reflex-patterns or habits to the environment of the individual. Hysteria, again, is according to Dr. GOLLA a variety of neurosis characterised not by hyperexcitability but by subnormal activity of the affective mechanism, as revealed by galvanic reflex tests. To this last considerable importance is attached, and an ingenious theory of the nature and ætiology is adumbrated, rather than worked out, depending on the objective fact of absence or diminution of the galvanic reflex in response to stimuli of an affective order. It ought to be mentioned, however, that PRIDEAUX not only found normal reactions in cases of hysteria, but also took records of the galvanic reflex in certain individuals in the normal state and under hypnosis and obtained no appreciable modifications in the reflex as between the two.

Assuming, or accepting, the reality of the objective physiological findings so patiently and ably determined by Dr. GOLLA, are we thereby any nearer the solution of the problem? Do alterations in neuro-glandular mechanisms, in muscle tone, and in galvanic response, in affective reaction and nerve-cell oxidation, afford proof of the physicogenic as opposed to the psychogenic derivation of hysteria and nervous asthenia, of anxiety neurosis and compulsion neurosis? Are we any the more sure that neurotic symptomatology cannot ever be caused by intrapsychical conflict and by unconscious motive? The value of the researches of Dr. GOLLA resides less in the conclusions tentatively advanced than in the orientation they exhibit towards a sorely neglected side of practical medicine, that of the objective examination of the sufferer from functional nervous disease, and the application to his condition of the resources of the physiological laboratory. To this topic, which is bound to augment steadily in importance, the Croonian lectures of 1921 form a noteworthy contribution. Dr. GOLLA cites apparently with approval the view of RIBOT, that no one really has pleasure in work itself; to its accomplishment only do we look forward with pleasure. The sensory presentation of the bodily activities accompanying effort, we are told, is a "disagreeable feeling" which we do our best to allay by accomplishing the specific action demanded. But there is much to be said, none the less, for the view of one who was no flâneur in his own sphere of activity, that "to travel hopefully is a better thing than to arrive, and the true success is to labour."

HEALTH SERVICES IN WALES.

THE second report of the Welsh Consultative Council of the Ministry of Health has been presented to Parliament. It deals comprehensively with a scheme for the systematised provision of health services in Wales. The establishment is recommended of a National Health Institute of Wales at Cardiff, with four Central Health Institutes at Bangor, Wrexham, Swansea, and Newport, and 59 Local Health Institutes at suitable centres. For thinly-populated areas it suggests that in lieu of local institutes there should be small subsidiary hospitals or centres for clinics, with single clinics, these to consist, perhaps, of not more than two beds in very sparsely populated districts. The report further considers in detail existing hospital accommodation in Wales, and finds this to be inadequate for the residential treatment of persons suffering from non-infectious disease, other than mental disease and tuberculosis. How short the accommodation is estimated to be may be judged by the recommendation of an increase of beds of from 50 to 75 per cent. In addition to convalescent homes, of which there are 11 in existence, the report advocates the institution of rest, or holiday, homes for workers run down in health. Better provision of institutions for mental deficiency and for the training of cripples is found to be needed. The provision of full-time specialists for certain diseases, and of consultants to be available in other cases when required, is approved.

Part II. of the report is devoted to the problem of the form of local government which should be established for the administration of the health scheme advocated, and for doing away with the complexity arising from too many authorities interested in health and from too small units of administration. The scheme is capable of effecting much that is highly to be desired, and to be one susceptible of improvement, when once it has been set in motion and when experience has shown where it is defective. It is, however, impossible to ignore at the present time the necessary demand for national economy, and the unwillingness of the community to increase the burden of taxes and rates already imposed upon it. Therefore it would appear that a national supervising local authority is likely to find a large sphere of usefulness in Wales in bringing about improved health service by better administrative methods, and by utilising existing institutions, the services of existing officials, and the services of voluntary workers to the fullest extent. It is not possible to predict or even to advocate immediate, wide-reaching, and costly development, either in the direction of new institutions or of an increased paid service of administrators. To effect a better service without considerable increase of outlay would commend a well-organised health authority to the public it served. To increase the liability of those who have to find the money would arouse hostility and be destructive to efficiency. It seems clear that in all health schemes gradual and considered development, rather than costly and spectacular innovation, will have to be a necessary policy for many years to come; and that anything in the nature of costly experiment on a large scale must be avoided.

Annotations.

"Ne quid nimis."

SUBMARINE HYGIENE.

THE men of the Submarine Service took great and mysterious risks on our behalf, and for their courage we hold them in honour. But in peace-time they still have to face discomforts of which we know little. Perhaps the most persistent is the stuffiness of the boats, which is explained in a handbook for medical officers of Submarine Service, by Surgeon-Commander R. W. B. Hall, R.N., issued by the Admiralty. Stuffiness is due to the presence of the crew and to gases from the batteries and engines. The engines now blow the products of combustion straight overboard, so carbon monoxide is no longer a danger, and the specially susceptible white mouse, the original mascot of the service, and figured on its banners, is no longer its guardian angel From the secondary batteries, while they are being charged, hydrogen is liberated, and, if in quantity, may cause explosion; also, if leakage occur or disaster, and sea-water floods a battery, chlorine is given off, deadly in 1 part to 10,000. But the chief unavoidable impurities arise from the crew, products of respiration or perspiration, emanations from the body, clothing, or food, and tobacco-smoke. The unpleasantnesses are due to heat, moisture, smell, loss of oxygen, increase of carbonic acid, and, rarely now, carbon monoxide. Arseniuretted hydrogen may be present from aforetime carelessness in the preparation and supply of the sulphuric acid and the lead used in the batteries.

When a boat is on the surface she is ventilated through the conning tower, the hatches, and special ventilating shafts, while if under way, a free current of air is drawn into her through all apertures by the suction of the engines, which discharge the used air overboard. During submersion no fresh air can be introduced, and at first reliance is placed on 16-inch traversing table-fans which keep the air of the compartments freely moving and mixing. After some twelve hours the inhabitants will begin to pant and the purifiers must be used to get rid of the increasing carbonic acid, the air being drawn constantly through trays of soda-lime, renewed every four hours. The air then becomes unduly hot and moist and is passed through coolers, which condense the moisture as snow. Generally there are two ventilation systems, one for the torpedo-room and fore-end, the other for the engine-room and the after compartments, each with its own supply and exhaust trunks for use when the vessel is on the surface, and each helping the mixing of air when the vessel is submerged. The battery exhaust is of special importance when recharging is proceeding, and it can be separated entirely from the general ventilation of the boat. The water-closets have air-exhausts to the engine induction system, useful on the surface: but the closets can be used when the vessel is not deeply submerged, for excreta are washed out of the pan, by sea water admitted through a specially guarded inlet, into a pressure-tight chamber, which is then closed to the pan, and the contents are blown into the sea by air pressure of 80 lb. or so. As to diseases, constipation is frequent, and dermatitis from petroleum; the risk of heat-stroke to crews of submarines operating in the tropics is great; eye-strain causes anxiety, it results from long spells at the periscope, but it is understood how needful it is that the observer shall be physically comfortable and have a good seat and a periscope that fits him and suits his sight. Eye-strain depends also in a small degree on the lighting of the boat, for the only light when submerged is electric. Lighting nowadays, to avoid glare, is indirect, the lamps being shielded by metal reflectors which disperse the light over the sides of the vessel painted a "matt" white; there is no enamel paint. Officers and men are very carefully physically selected, the ultimate responsibility apparently resting with the senior medical officer at Fort Blockhouse, the head-quarters of the Submarine Service at Portsmouth. Men are not accepted who have suffered from tubercle, pleurisy, asthma, acute rheumatism, or syphilis. Extra and varied food is supplied,

The issue of the book is a return to an old practice of the Naval Medical Department, whereby it sought to teach its own officers by a well-conceived, well-executed handbook. We should like to see included in a later issue tables of the loss by diseases and injuries in the Submarine Service during each of the preceding five years, that medical officers might learn in what directions particular protection might be required.

PRIMARY CARCINOMA OF THE KIDNEY AND URETHRA.

Dr. H. G. Bugbee,[1] of New York, remarks that while hypernephroma is of frequent occurrence, true malignant neoplasm of the kidney is relatively rare. Thus Albarran and Imbert in 1903 found only 13 cases of malignant adenoma out of 529 cases of renal tumour. Among 83 malignant tumours of the kidney operated on at the Mayo Clinic up to July 1st, 1912, only 32, according to Braasch, presented the triad of symptoms characteristic of malignant renal tumour—namely, palpable tumour in the region of the kidney, hæmorrhagic urine, and persistent pain in the region of the tumour, as well as the general symptoms of malignancy. Two of the three symptoms were present in 37 cases, and only one in 14 cases. The clinical diagnosis therefore must often be based only on one or two cardinal symptoms. The conditions most likely to be confused with renal tumour are: (1) "essential" or nephritic hæmaturia; (2) retroperitoneal tumour; (3) bilateral cystic kidney; and (4) closed pyonephrosis. In the great majority of cases a pyelogram clears up the diagnosis. Carcinoma of the kidney, of which Dr. Bugbee records an example, is a distinct pathological entity to be differentiated from hypernephroma. His patient was a man, aged 44, who had had a sharp attack of left renal colic in 1892, but did not pass a stone. About 12 years later he had another attack, after which his urine became claret-coloured after riding on horseback, but he had no colic or other urinary symptoms. He remained well till October, 1918, when he had a severe attack of influenza, and two weeks after the onset developed profuse hæmaturia, and pain and tenderness in the left upper quadrant and left lumbar region. Later frequent and urgent micturition was noted, and a mass became palpable in the left upper abdomen. There were profound anæmia and marked prostration. The urine was thick with blood and pus. X rays revealed a large oval calculus in the left ureter 25 cm. from the bladder. A pyelogram showed that the renal pelvic outline was destroyed. The pre-operative diagnosis was impacted ureteral calculus and pyonephrosis. At the operation a mass of blood clot and pus was found surrounding the kidney which appeared to be gangrenous. Death took place six months later. Examination of the renal tumour showed that it was a medullary carcinoma.

Primary carcinoma of the urethra is so rare a condition both in the male and the female that considerable interest attaches to a simultaneous article by Dr. Richard F. O'Neil,[1] of the Massachusetts General Hospital, who records two cases in a man and woman respectively, together with a review of the literature. Primary carcinoma of the male urethra, of which Dr. O'Neil has collected 58 cases, rarely occurs before the age of 50. Predisposing causes inelude trauma and leukoplakia, resulting from chronic irritation. Stricture is present in more than 50 per cent. In some cases there is no venereal history whatever. In the majority of cases the lesion arises from the bulbous portion of the urethra, but Peacock and Menard have each reported cases in which the disease began in

[1] Journal of Urology, April, 1921.

the penile urethra close to the meatus. The growth spreads along the mucous membrane, destroying it, and invading the corpus spongiosum. Later the periurethral tissue becomes invaded, and abscesses and fistulæ supervene, opening in the perineum, scrotum, pubic region, buttock, or rectum. The growth assumes the type of squamous epithelial cancer. The early symptoms are not characteristic, but are merely those of ordinary urethral stricture, consisting in increasing difficulty and frequency of micturition with or without attacks of acute retention, as well as hæmaturia and a purulent discharge. Later on a swelling appears in the perineum simulating periurethral abscess and infiltration and extravasation of urine. Dr. O'Neil remarks that while the disease is rare, its possibility should always be borne in mind in the presence of an indurated perineal mass in a man over 50, as its recognition has a very important bearing on prognosis and treatment. Primary carcinoma of the female urethra, of which Dr. O'Neil has collected 68 cases, including his own case, is commonest between the ages of 50 and 60, and 60 and 70, though instances have been reported as early as 26 or 27 years of age. The symptoms consist in frequent and painful micturition, hæmaturia, and discharge from the urethra. Retention of urine may occur. Pain is usually a prominent symptom, and may be extreme in some cases. The diagnosis is not usually difficult, especially when the disease is moderately advanced. Syphilis in the primary or secondary stage is to be excluded, as well as simple caruncle or a benign tumour. As regards treatment, a large proportion of the cases both in the male and female have become so advanced when first seen as to be inoperable except by local drainage, or by perineal or suprapubic drainage for the relief of urinary retention. More or less radical excision in some cases has been followed by encouraging results.

THE ACTION OF PILOCARPINE IN CASES OF BRAIN LESION.

Prof. Carlo Besta of the University of Messina, contributes an interesting paper on this somewhat novel subject in the *Riforma Medica* of June 11th. In the course of a series of investigations on the action of certain drugs in cases of lesions of the central nervous system, he experimented with injections of pilocarpine in several patients with head injuries and observed results which apparently have not hitherto been described. In ascending frontal lesions, associated either with simple motor disturbance or with destruction or compression of the contiguous brain structure, there occurred within a few minutes after the injection of 2 centigrammes of pilocarpine hydrochloride, and simultaneously with the onset of sudoral and salivary hypersecretion, muscular tremors and spasms on the side of the body opposite to the cerebral injury, with increase in the tendon and bone reflexes. These phenomena increased rapidly, reaching their maximum intensity in about 20 minutes: in one set of cases they were of a choreo-athetosic type, intermingled with jerking movements, in others, which were the more numerous, there was intense hypertonus with continuous tremor and rapid jerkings. In all cases the reflexes were exaggerated and the rigidity was sometimes so marked that the lower extremity remained in an attitude of extension when the limb was raised by placing the hand under the popliteal space. The clinical picture was modified according to the site of the cortical lesion, the upper extremity being mainly involved if the lower and middle portions of the ascending frontal were implicated, and the lower extremity in damage to the upper portion. This topographic relation, however, was not absolute, and moreover the neck, face, and tongue muscles only exceptionally showed any evident manifestations, perhaps due to the fact that in organic cerebral lesions these muscles normally have a symptomatology less evident than that of the limbs.

The interest of these manifestations, apart from the problem of their pathological mechanism, lies in the fact that they constitute a characteristic sign of lesion of the pyramidal tract; in 200 cases of head injuries in which the injection of pilocarpine was practised several times and always with the same result, they were observed only when the motor zone was injured—that is to say, the ascending frontal and the base of the three frontals—while they were absent in pure lesions of the frontal lobes, the parietal (including the ascending parietal), temporal, and occipital lobes and those of the cerebellum. The results obtained in cases of head injury encourage the hope that also in cases of cerebral lesion from organic disease interesting results may be obtained from a diagnostic point of view. To this end, Prof. Besta directed his attention to cases of hemiplegia and hemiparesis due to organic lesions of the motor tract, and found that, after the injection of pilocarpine, phenomena occurred exactly analogous to those observed in cases of head injury. It was found, moreover, that in capsular or subcortical lesions the phenomena induced were always of a type more exaggerated and diffuse than in pure cortical lesions. It is worthy of notice also that the symptoms were very marked in seven cases of patients suffering from paresis after encephalitis lethargica. In three cases of tumour of the posterior cerebral fossa with symptoms of hemiataxy, adiadocokinesis, &c, injections of pilocarpine produced no appreciable effects in those parts affected by the cerebellar symptoms, but caused typical and elective exaggeration of the pyramidal symptoms on the opposite side. On the other hand, in two cases of Jacksonian epilepsy, due to cysts at the base of the third frontal and in the parietal lobe, the injection of pilocarpine remained inactive. From these facts it appears that the drug acts only when the cortex of the motor zone is directly involved. The explanation of these phenomena is not to be found in the increased secretion of sweat and the cold produced by its evaporation, because they reach their maximum intensity when the sweating is also at its height, and the patients complain of disagreeable heat; further proof of this was afforded in a case of spastic hemiparesis with hemianidrosis in which the pilocarpine caused sudoral hypersecretion on the sound side only, and had no such effect on the paretic side, which all the same exhibited the phenomena of diffuse hypertonus, tremors, spasms, and increased reflexes. Moreover, if the injection of pilocarpine be preceded by that of a quarter of a milligramme of adrenalin, the secretion of sweat is inhibited, while the nervous phenomena remain uninfluenced; sulphate of atropine has the same effect. It appears, then, that this special action of the pilocarpine is independent of that which causes increased sweat secretion, and is probably one of direct action on the central nervous system; but how and where it acts is not possible to say in the present state of our knowledge. There may be here some analogy, however, to the symptoms produced by ether narcosis observed in the subjects of head injuries.

Prof. Besta's observations are interesting from a clinical point of view, since by means of a simple and harmless measure data may be obtained which demonstrate the existence of a lesion of the cortico-motor tract not revealed by ordinary clinical investigation, and of which further research may succeed in locating the exact site. His observations also have a scientific interest; they have apparently not been described previously and demonstrate a sphere of activity in pilocarpine hitherto unsuspected.

DELAYED POISONING BY ARSENOBENZOL COMPOUNDS.

MUCH interest and a good deal of alarm have been caused these last few years by the occurrence of a number of cases of fatal necrosis of the liver after the administration of salvarsan or its equivalents. One of the most curious points has been that symptoms of illness have frequently not come on till several weeks after the administration of the last dose of a course of treatment. In an interesting article,[1] Dr. A. G. R.

[1] Journal of Pathology and Bacteriology, vol. xxiv. (1921), p. 257.

Foulerton puts forward an explanation of this anomaly. Recalling Leathes's work, which showed that the common fatty changes in the liver are due to the accumulation in the cells of that organ of fat brought from the normal fat deposits of the body to be unsaturated and so made ready for immediate use, he suggests that the arsenobenzol compounds are gradually accumulated and stored up in the fat deposits during a course of treatment, and then, owing to some slight variation in the normal course of metabolism, are carried to the liver with the fat in which they are dissolved in such quantities that the liver cells are killed en masse. He points out in this connexion that a considerable number of cases of delayed salvarsan poisoning have occurred in men who have been in hospital for some weeks where rest and an ample diet may be presumed to have led to the accumulation of reserve fat; if such a case returns to a more strenuous life the mobilisation of some of this fat may set free an undesirable quantity of arsenic.

T.N.T. POISONING IN AMERICA.

THE short period during which T.N.T. was extensively used in America afforded no opportunity for exhaustive study of its poisonous effects, but the article by Dr. Alice Hamilton in the July issue of the *Journal of Industrial Hygiene* gives a useful account of American experience in manipulating this high explosive during the war. It summarises reports made by students placed in certain of the factories to make observations; there does not, however, seem to have been in the United States any organised medical supervision of those exposed to risk as was established with success in this country. Contrary to early English experience, the handling of pure T.N.T. seems to have been harmless compared with handling amatol, a mixture of T.N.T. with the hygroscopic salt, ammonium nitrate. The skin as a portal of entry was recognised to be of overwhelming importance, while oily substances favoured absorption. No evidence, from observing negroes, could be obtained of any racial immunity. Most of those employed were men, hence a comparison of the susceptibility of men and women could not be established. Younger men were found to be more susceptible than older men, to an extent which justifies the statement that it seems poor economy to employ them. Just as in England, those within the first three months of employment were found to be those most liable to the poison. No evidence was found to establish the conclusion that crude T.N.T. was more poisonous than pure T.N.T. or vice versa, but crude T.N.T. was more productive of dermatitis. The Webster reaction, which was brought out in this country, was found to be a trustworthy test for the absorption of T.N.T., but not of impending toxæmia, since the test frequently becomes negative in severe cases, probably due to the elimination of T.N.T. being suspended in such cases.

ENDOCRINE BALANCE.

INCREASE in our knowledge of the effect of the internal secretions has provided physicians with valuable methods of treatment; but there is to-day a danger that the treatment will outstrip the knowledge and that enthusiasts will pin their faith much too largely upon glandular therapy. Harvey Cushing in a paper on the "Disorders of the Pituitary Gland,"[1] has laid special stress upon this danger. After mentioning the enormous amount of literature which has arisen upon the subject in recent years, he gives quotations from different papers, showing to what extremes such therapy has been carried. There is one quotation especially that deserves repeating. It is, that "in diagnosis it is no longer a question of bimanual examination, of listening to the lungs, to the heart, testing the blood-pressure, examining the urine, examining the blood .... It is a matter of observation and also of tests to determine what the endocrines have been doing to a patient before she comes to us ...." English surgeons will be conversant with similar extreme views which have been put forward in this country. We may recall a suggestion made at a recent discussion in London that the treatment of Graves's disease consisted solely in administering the correct glandular extract. Long articles containing misleading statements have appeared in the lay press on the value of thyroid and other glandular extracts. Such statements are usually put forward without any adequate proof and too often are based only upon attractive though fantastic theories. The danger of such views is two-fold. Firstly, there is the fact that the extracts are widely advertised by their makers and are often sold by chemists without any restriction, so that they may be taken in sufficiently large quantities to give rise to dangerous symptoms. In this respect it is only necessary to mention the ill-effects that may follow the administration of large doses of thyroid extract. In the second place, certain symptoms may be wrongly interpreted and extracts may be administered without any attempt being made to determine the cause of the symptoms. When extreme claims are made for the value of such extracts by qualified medical men the danger becomes very great indeed. Cushing, in his paper, has taken as the basis of his remarks the disorders of the pituitary gland. He has carefully reviewed the symptoms which are caused by disorders of this organ and has shown how they may be treated; but he also points out how very little evidence there is at present at hand to show that the administration of extracts of this gland are of any real value. He lays stress upon the need for those who would pursue the subject in the proper spirit to keep an exact almanac of results, so that they may be able to avoid unfavourable winds, currents and counter-currents, and may discountenance the exploitation of the few discoveries that have already been made.

[1] Disorders of the Pituitary Gland, Retrospective and Prophetic, Presidential Address before the Association for the Study of Internal Secretions. Boston, June 6th, 1921.

BLOOD SUGAR REGULATION.

IN a recent issue of the *Journal of Biological Chemistry* (1921, vol. xlvi., p. 381) E. Langfeldt gives a useful historical survey of investigations on sugar regulation before recording the results of his own experimental work. Bernard supposed that blood sugar was secreted by the liver, and that this secretion was regulated by the nervous system. By a nerve path via the medulla oblongata the liver received impulses to increase sugar secretion, and thus the blood was supplied with sugar in proportion to the requirement. On this theory Bernard regarded diabetes as a nervous disease. Von Noorden introduced a change in this theory; he assumed, with Bernard, that the transformation of glycogen into glucose was governed by the sugar requirements of the organs, but supposed that the transformation resulted from a chemical stimulus brought from the muscles to the liver. Bernard supposed that the diastase found by him might be an important factor in the process, but it was not clear how glycogen and diastase could exist in the same cell without immediate glucose hydrolysis. Bang suggested that pure liver diastase is inactive and that an activator is necessary; that by the secretion of bile the liver cells absorb and secrete sodium chloride, which activates the diastase and maintains normal blood sugar regulation. The mechanism of adrenalin hyperglycæmia, according to Bang, is established in the same way. Grode and Lesser, however, suggest that the glycogen and diastase exist separately in the same cell, but come in contact under certain influences. In the opinion of the author these views are incomplete in that they do not account for both glycogen hydrolysis and glycogen formation, both of which participate in blood sugar regulation. From a critical examination of the literature the author concludes that the pancreas is essential for glycogen formation in the liver.

In researches made on alimentary hyperglycæmia in normal dogs the author found that the blood sugar rapidly fell under normal conditions, it was not

excreted in the urine, and there seemed no other explanation than that it is deposited as glycogen. In depancreatised dogs the fall of the blood sugar was much less rapid, and the author concludes that the formation of glycogen depends upon the presence of the pancreas hormone. Further experimental work on partially depancreatised dogs showed that an increase in hydrogen ion concentration of the portal veins is able to produce a heavy glycogenolysis, which led the author to investigate the conditions of action of the liver diastase with the following results. The optimum action of liver diastase in the presence of phosphate anions is at pH6.2, and the optimum of the chloride diastase is at pH6.8. When adrenalin is added the optimum is shifted to the alkaline side, the optimum being at pH7.73. Thyroiodine when added alone has no influence on the hydrolysis of glycogen. Simultaneous additions of adrenalin and thyroiodine has a strong effect. Pituitary extract is without effect. From these experimental facts the author concludes that glycogenolysis is governed by the hydrogen ion concentration of the liver cells, that with a constant blood flow and constant temperature glucose is discharged at a constant rate from the liver to the blood; a part of this glucose is utilised by the body, a part stored in the muscles, and the remainder returns to the liver, where it again forms glycogen. Glycogen formation depends upon the presence of the pancreas hormone, the materials being derived from the carbohydrates and proteins of food. It is concluded that glycogen formation and glycogenolysis are consecutive processes. The diastase acts constantly and glycogen formation takes place rapidly. These conclusions are applied by the author to the origin of hyperglycæmias, which may, he assumes, arise in the following ways: (1) by a change of the hydrogen ion concentration of the liver so that the pH is identical with or close to the optimum of the action of diastase in the presence of salts, as influenced by the action of acids on blood sugar concentration; (2) by a displacement of the curve of action of the diastase so that the optimum is close to the hydrogen ion concentration of the tissue, as illustrated by the action of adrenalin; (3) by a deficiency of the pancreas hormone, giving rise to a decreased formation of glycogen, with a resultant excess of sugar in the blood, as in diabetes mellitus and experimental pancreatic diabetes.

The author finally advanced a simple chemical theory of blood sugar regulation based upon the fact that the action of liver diastase depends on precise hydrogen ion concentrations.

PULSE AND TEMPERATURE.

THE possible interaction of pulse-rate and temperature constitutes an interesting and, we believe, hitherto unexplored field; for the commonly observed relation between the increase of rate and the rise of temperature is generally considered to be a common reaction to intoxication. Dr. E. Rist[1] records an interesting case of infection with paratyphoid A bacillus, occurring in a soldier with a tendency to tachycardia. During the febrile stage of this infection he had four attacks of tachycardia, lasting respectively 3½, 2½, 2 days, and 24 hours. It appeared that when the pulse-rate rose to a certain speed (between 80 and 90 per minute) the tachycardia was constantly induced, the rate rising abruptly to between 180 and 200. The somewhat remarkable consequence of this trigger release was an equally abrupt fall in the temperature, so complete as to suggest when it occurred for the first time that the patient was developing peritonitis. The temperature remained almost normal during the tachycardia, rising again as soon as the pulse-rate fell. Dr. Rist, pointing to the modern conception of fever as a result of increased production of heat and noting in this connexion the experiments of Warren Coleman and E. F. du Bois with the Atwater-Rosa calorimeter, explains these phenomena by supposing that the deficient action of the heart, and the consequent slowing of circulation and diminution of circulating blood, so reduced oxidation as to make impossible any extra production of heat. From this quite plausible explanation it is not a long step to the inquiry: What is the normal result of an increased pulse-rate in fever? Is the accompanying pyrexia the direct result of extra oxidation? If so it is easy to understand why the relation 10 per minute increase of pulse-rate for every degree rise of temperature holds with such regularity for almost all fevers, and why it does not hold true in the special case of pneumonia. In Dr. Rist's case the blood pressure was recorded, and was found to fall during the attacks of tachycardia and with the fall in temperature. The assumption generally made that there is in fever some disturbance of thermotaxy must probably be retained, since without such a disturbance the cooling machinery would be normally capable of neutralising the effect of extra heat production.

[1] Annales de Médecine, 1921, No. 5, p. 360.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

DURING the years of the war the meetings of this society, though not altogether suspended, were greatly diminished in number and were merely formal. During the last two sessions for the years 1919–20 and 1920–21 the usual activities of the society have been resumed. Founded in the year 1872, under the chairmanship of the late Dr. Chadwick, when the old Leeds Medical and Surgical Club came to an end, the society has for long been regarded as the professional centre of the West Riding. The membership now amounts to 296 ordinary members, and the average attendance for some years prior to the war was about 70 to 80. The meetings are held at the General Infirmary at Leeds and this enables a large amount of clinical and pathological work to be brought before the members. About 12 meetings are held each session, and these usually include two evenings specially devoted to the exhibition of cases, and one, which for convenience is held at the medical school, for the discussion of pathological problems.

In 1892, during the presidency of Mr. William Hall of Leeds, the society decided to celebrate its coming of age the following year by instituting an honorary life membership to enable it to do honour to those members who had retired from practice and who in the opinion of the committee had brought credit on the society. The first three on whom this choice fell were Sir T. Clifford Allbutt, Sir James Crichton-Browne, and Mr. C. G. Wheelhouse, all of whom had taken part in the formation of the society. This list has since been enlarged by the addition of Mr. Pridgin Teale, Dr. T. Churton, Dr. Joseph Dobson, Dr. J. E. Eddison, Mr. Charles Richardson, Mr. Edward Ward, and Colonel H. Littlewood. By a happy arrangement, which is for the benefit of both the parties concerned, the medical library of the society and that of the faculty of medicine of the university are amalgamated and lodged at the medical school, which adjoins the infirmary. All the members of the society thus enjoy the use of a really good medical library and reading room. It is the custom to elect as president in alternate years a medical man who is in practice in Leeds and one who practises in one of the other towns in the West Riding. The president for the ensuing session, which opens in October, and which will see the jubilee of the society, is Sir Berkeley Moynihan.

THE second annual report (Cmd. 1446) of the Ministry of Health has been issued complete in one cover, appearing several weeks earlier than the similar report of last year. At its price of 2*s*. Sir Alfred Mond hopes to enlarge the circle of those who buy and read an account of some of the operations of Government which affect most closely their daily lives. We have dealt with the major part of its contents when reviewing the recent report of the chief medical officer to the Ministry.

THE COURSE OF SUMMER DIARRHŒA IN LONDON, 1856–1920.

By JOHN BROWNLEE, M.D., D.Sc.,
DIRECTOR OF STATISTICS, MEDICAL RESEARCH COUNCIL.

A GOOD deal of work has been done in the Statistical Department of the Medical Research Council during the last year on the question of the relationship of weather to summer diarrhœa. This is not yet completed, but a short synopsis of what has been done is given here.

It has, of course, long been known that epidemic diarrhœa is a disease associated with warm summers, and in the report of the Local Government Board published in 1885 Dr. E. Ballard stated that when the underground temperature at the depth of four feet rises to 56°F. summer diarrhœa begins. This observation is roughly true, but in the work we have done it has not been found that the relationship of summer diarrhœa to the earth temperature is closer than to that of the air. In consequence the following remarks are based solely upon the temperature of the air. It has long been my opinion that summer diarrhœa was in the main (for its ætiology must be multiple) not one disease but two, the epidemic of the first type having its maximum in late July or early August, and of the second type in September. The forms of the epidemics are different and also the duration, the first having a steep ascent and a rapid decline, the second a more gradual slope throughout.

The first trials sought to eliminate the second epidemic. This was done by assuming that only those deaths which were in excess of certain levels were to be used for statistical purposes. In taking the correlations, therefore, between temperature and deaths from diarrhœa, the figures for no week were used unless at least 75 deaths from diarrhœa occurred. The sums of the number of cases above this level were first ascertained. The next level chosen was 100 deaths per week, the third 125, and the fourth 150. Corresponding excesses of temperature were also calculated. Using the mean weekly temperature as the standard of temperature the excesses during the summer above the successive levels of 56°, 58°, 60° and 62° were summed. The most adequate measure seemed to be a combination of the sum of the weekly excesses of temperature over 60° and the sum of the excesses of the diarrhœa deaths over 100. In this case the correlation is in the neighbourhood of 0·8. It would be thus possible to calculate, if the excess temperature above 60° were known, the amount of diarrhœa to be expected very approximately.

The second series of correlations apply to the rise of the first epidemic. The excesses of temperature over 60° prior to the 28th week in the year were summed, and the number of deaths from diarrhœa registered before the end of the 29th week placed in comparison. Here again a very high correlation was found, the correlation being above 0·8. Thus if we know the number of degrees of temperature in excess to the end of the 28th week, the number of deaths within an error of 20 per cent. could be calculated. When, however, the matter was considered more fully it was discovered that a strange break in the statistics takes place. Up to 1899 the relationships hold very closely; after 1899 a gradual change occurs. Instead of a considerable proportion of the epidemic occurring before the 29th week, after that year it begins uniformly later. In 1900, 1901, 1904, 1905 and 1906, though the epidemic is of very similar form to that experienced before 1899, it occurs later in the year though the excesses of temperature were such as would have given rise to epidemics in previous times earlier in the year. From 1907 the maximum of the epidemic, in place of occurring as a rule about the 30th to the 33rd week, occurs in the 35th to the 40th week, and instead of a large epidemic occurring—except in one year, 1911—the number of deaths is comparatively small. As already remarked, epidemic diarrhœa seems to be a mixture of two diseases. Till 1899 the first was predominant. Before that date the later epidemic was most marked in 1895. In 1907 it became predominant; the only year since 1907 in which the amount of diarrhœa was anything comparable with previous experience was 1911. Even in such a very hot year as 1917 a very small epidemic of summer diarrhœa occurred. In former times the deaths associated with such a temperature as occurred in that year would have been well over 200 a week.

It would seem, therefore, that the first type of diarrhœa has become extinct, or nearly extinct, and that the later type alone survives. Inquiring at the London Health Office, Dr. W. H. Hamer tells me that the by-laws for the cleansing of London came into action in 1893, and that by 1898 London had become a vastly cleaner town. This must account for a part of the change, but there is some other phenomenon in addition. For instance, the excess of temperature in 1884 before the 29th week was on all fours the same as that of 1914, and yet the number of deaths in the 29th week of the former year was about 600 and in the latter only 30, while with a very warm summer the epidemic had its maximum in the 40th week of the year. I therefore think it likely that though there may be a good deal of diarrhœa in London this summer it will be late diarrhœa and not on the same footing as the devastating phenomenon of the last century.

CONTROL OF VENEREAL DISEASES.

CONTINUITY OF TREATMENT.

TWO important reports, here summarised, emphasise the fact that if we fail to secure continuity of treatment our venereal diseases scheme is a failure. Dr. E. W. Hope estimates that 60 per cent. of patients in Liverpool fail to continue their treatment until they are free from infection. Dr. F. N. K. Menzies and Colonel L. W. Harrison state that the average failure to complete treatment for the whole of the London clinics cannot be put at less than 30 per cent. and is probably higher. The London report points out obvious defects in the arrangements of the clinics which no doubt in part account for this serious state of affairs. The Liverpool report lays stress on the need for fresh legislation to enforce continuity of treatment, and contains a draft of the proposal of the Liverpool Corporation to this end. Both reports merit close study.

CRITICAL REPORT ON THE L.C.C. SCHEME.

The report on four years' working of the joint venereal diseases scheme for London and the Home Counties from the pen of Colonel Harrison (representing the Ministry of Health) and Dr. Menzies (representing the London County Council) shows that the facilities for treatment at the existing clinics are not adequate, and lays emphasis on the need of coördinating the work of the numerous rescue and preventive societies.

The Developing Scheme.

The scheme came into operation in 1917 and consisted of an arrangement between the counties of London, Bucks, Essex, Herts, Kent, Middlesex, and Surrey, and the county boroughs of Croydon, East and West Ham on the one hand and the principal London hospitals on the other hand, for the establishment of treatment centres, the pathological examination of specimens, and the distribution of salvarsan substitutes. The population to be served by the scheme was nearly 8 millions, of which the L.C.C. was responsible for more than one-half. The hospitals taking part numbered 21 in 1917, and the sum payable for treatment in 1917 was £27,000 and for pathological examination £6500. Since 1917 more hospitals have been included in the scheme and during 1920 the work was carried out by 27 hospitals, the total of grants-in-aid for treatment being £75,475 an for pathological work £15,100. Special developments have been the inclusion of eye hospitals in the scheme, the provision of accom-

modation for pregnant women suffering from syphilis, the provision by the M.A.B. of accommodation for 18 mothers and 30 children for the in-patient treatment of ophthalmia neonatorum, and the allocation of grants-in-aid to three hostels for boarding women and girls who are attending the clinics. The number of new patients suffering from venereal disease attending the clinics was 13,025 in 1917 and 23,514 in 1920, the principal increase having taken place in 1919. Early difficulties in staffing the clinics have passed away.

Essentials of an Efficient Clinic.

The report lays down the essentials of an efficient clinic. It must attract patients. There must be no undue waiting for treatment and reasonable privacy and sessions at convenient hours. It must be well-equipped and arranged so that there is no waste of the time of the medical staff. There must be provision at all hours of the day for intermediate treatment of gonorrhœa in both sexes by nurses and orderlies. The staff should be coördinated under one head and the medical staff should not be employed in doing work that can be done by clerks and orderlies. The hours at which sessions are held should be determined by the convenience of the patients, and the sessions should be sufficiently numerous to permit of each patient receiving the attention which is adequate to render him non-infectious in the shortest space of time. The conduct of the V.D. clinic, the report lays down, should be governed by the principle that it was established to render venereal patients permanently non-infectious, and that in every instance where it fails to accomplish this object it fails entirely to achieve the purpose for which it was established.

Facilities Available in 1920.

The facilities are not yet all that they should be. Most of the clinics are established in existing out-patient departments and the premises are used for other purposes between sessions. Intermediate treatment of gonorrhœa cannot be arranged satisfactorily. The restriction of hours causes congestion and overcrowding and delays detailed examinations. The rooms are not conveniently arranged; the lack of cubicles wastes the time of the medical officer and leads to undue exposure of the patients and want of privacy. It is obvious that more medical men are needed to staff inconveniently arranged clinics. To secure conveniently arranged clinics considerable capital expenditure is needed, and unfortunately no provision has been made for capital grants. A beginning has been made. During 1920 completely new premises especially designed for a venereal diseases clinic have been provided at St. Thomas's Hospital, and concurrently with the opening of these new premises there has been appointed a specially selected medical, nursing, and male orderly staff to permit of the facilities for diagnosis and treatment being available on week days from 8 A.M. until 10 P.M.

Selection of the Staff.

The selection of the staff is recognised as the most important factor in the success of the clinic. Special difficulties caused by the war have gone, but in some hospitals the work remains in the hands of members of the honorary staff without regard to the dominant consideration that ability and time to do the work properly should be foremost. Sometimes the medical staff is changed annually, rendering a high degree of efficiency impossible. Sometimes the head only attends occasionally and the real work is done by assistants. It is urged that the time has now come to appoint only men and women whose skill, knowledge, and experience in the diagnosis and treatment of venereal diseases is beyond all question, and to insist that those appointed should devote the time and attention necessary for efficient performance. Venereal diseases must no longer be a sub-department of dermatology, genito-urinary surgery, or gynæcology, and the medical officer in charge should have the same privileges and status as the honorary physicians and surgeons. The busy practitioner and the medical student have not been able to avail themselves much of the facilities for instruction offered at the clinics, and more should be done to encourage short-time paid clinical assistants. Payment of the staff is not at present on a satisfactory basis and the writers of the report see no difficulty in fixing a proper scale.

Improvement in Treatment.

The treatment of gonorrhœa, partly owing to the lack of intermediate treatment and partly owing to overcrowding or want of system, is reported to be specially unsatisfactory. More uniformity in the treatment of syphilis could be secured with advantage. The recording of toxic results from arsenobenzol treatment and the question of standards of cure need more attention.

Some of the reasons given for patients ceasing to attend before the completion of treatment are: (1) abatement of symptoms and optimism; (2) difficulty in accounting for repeated absences from work; (3) nature of occupation—e.g., seafaring, commercial travellers; (4) "not satisfied with treatment," "dislike of doctor or nurse," "hurt by injection," &c.; (5) careless or ignorant patients. The average of patients ceasing to attend before completion of treatment for the whole of the London clinics cannot be put at less than 30 per cent. and is probably higher. The remedies are (*a*) for the medical officer to impress the patient with the serious nature of his disease; (*b*) to study the convenience of the patients and abolish long periods of waiting, inadequate attention caused by congested clinics; and (*c*) the use of prominent notices in the waiting rooms, distribution of leaflets, and so forth.

In regard to stillbirths more effort might be made through the midwives to secure the examination of suspicious specimens and the attendance of infected mothers at the clinics for treatment.

Social Implications.

The report recommends that money should be spent in circulating information amongst voluntary societies concerned in hostel and rescue work, such as the Women Police, Police Court Missionaries, Y.M. and W.C.A., Church Army, Salvation Army. At the end of 1920 grants-in-aid were made to seven hostels with total accommodation of 86 beds for their assistance in securing the regular attendance at the clinics of women boarders. There are about 100 refuges and rescue homes in London with a total accommodation of some 2000 beds. These homes do not, as a rule, train their inmates to earn an independent livelihood but simply to help in the domestic work of the home.

Most of the rescue homes try to exclude girls suffering from venereal disease. The report records a universally expressed desire amongst rescue workers for the provision of what may be conveniently termed "reception houses," the function of which would be to provide immediate shelter for the night or until the girl could be sent to a suitable home. The rescue worker needs to take full advantage of the "psychological moment"; at present she often fails because she cannot find immediate accommodation for the girl. It is suggested that these rescue workers and homes are insufficiently acquainted with the activities of other bodies doing similar work and that a careful survey of the present position with a view to better organisation is needed.

Many of the rescued girls are suffering from venereal diseases, and towards the end of 1919 the M.A.B. provided a 52-bed hospital in Sheffield-street for women suffering from venereal disease who come into the hands of the women police patrols. The causes of prostitution are discussed. The report ends with extracts from "Downward Paths," Flexner's "Prostitution in Europe," and appendices give the experience of rescue workers and others.

THE LIVERPOOL PROPOSALS FOR CONTINUITY OF TREATMENT.

In his annual report for 1920 on the health of the City of Liverpool Dr. E. W. Hope writes: "To say that the position in regard to the prevention of

venereal disease is not satisfactory would be to gravely understate the position." Only the fringe of prevention has been touched by the provision at great public expense, and under skilled guidance, of free treatment at each of the leading hospitals in the city. The diseased person may attend if he chooses and for as long as he chooses. The skill and the money expended do unquestionably result in alleviating a great deal of suffering and may to a small extent limit the spread of the disease. But the failure of the system is manifest: 60 per cent. of the patients cease to attend as soon as the grosser symptoms disappear but long before they are free from infection. In stating this Dr. Hope adds that the system of clinics now in vogue in Liverpool is admittedly as good as any in the kingdom. Clearly, he concludes, it is a waste of public money and public effort to give treatment which fails to have results. The public health object of that treatment is not primarily to benefit the individual but to protect the public, and if, because of non-continuance of treatment, the individual remains a source of danger and of infection, we have rank waste of money and of effort.

A specially appointed sub-committee of the Liverpool City Council has prepared for submission to Parliament a series of proposals which have already received the unanimous approval of the municipal authorities and the local medical profession. The aim of the clauses is to secure continuity of treatment till freedom from infection is reached in the case of every person infected with venereal disease. Such an aim involves compulsory removal to and detention in hospital in certain cases and the provision of suitable hospital accommodation for the purpose. Dr. Hope tells us that measures closely in line with these proposals have already been adopted with success in some of the British Dominions and also in the United States of America.

MEDICINE AND THE LAW.

Will-making by the Insane.

A PROBATE action arising out of the will of Joseph Priddle, who died in Camberwell House, Camberwell, was tried recently by Mr. Justice Horridge, two daughters of the deceased claiming probate of a will made by him when a certified inmate of that institution. Three sons asked that the will should be set aside on the ground of the testator's incapacity through insanity and that letters of administration should be granted. The husband of one of the daughters, at that time engaged to her, had taken part in the making of the will, and had employed a solicitor who had taken every precaution, including the obtaining from Dr. F. H. Edwards, medical superintendent of the asylum, of a written certificate that the testator "has been and is now in a condition to express his testamentary desires in a reasonable fashion," that he, Dr. Edwards, had scrutinised the will, and that "there is no reason from a medical standpoint, having in view my special knowledge of the case, why this will should not be quite valid." Mr. Justice Horridge drew attention to the cases of Sivewright *v.* Sivewright (1920, S.C., H.L., 63) and Banks *v.* Goodfellow (1870, L.R., 5 Q.B. 549). In the former Lord Haldane laid down that "the question is simply whether he understands what he is about," and went on to say that in the case of a testator suffering from a delusion which might have affected him in making the will, in order to invalidate it "the delusion must be shown to have been an actual and impelling influence." Mr. Justice Horridge, in pronouncing in favour of the will of Mr. Priddle, under which, as he had already observed, "the daughters received the lion's share of the testator's property," pointed out that the testator clearly suffered from delusions, but that the question was whether he was suffering from a delusion when the will was made. There was no expressed antagonism towards his sons. The evidence of Dr. Edwards showed that there was testamentary capacity. Dr. Edwards did not examine the testator as to any antipathy towards his sons, but there was no evidence of any. In comment attention may be called to the question of antipathy referred to. It had, of course, not been brought to Dr. Edwards's attention that there might be any such feeling. But it is a point which medical men in the same position may well bear in mind. The persons responsible for the certifying of any person as insane may be near relatives whose action he regards with resentment. They may have acted perfectly rightly and in the interest of the person certified, and it would be an undeserved hardship if they should suffer from animosity on his part which may be the result of an insane delusion as to their action.

Hospital Finance and National Insurance.

Lord Burnham's recent sympathetic and practical speech in the House of Lords on hospital finance and the obligations of the Government was fully reported in THE LANCET of July 30th (p. 257). One of his strongest points was undoubtedly made with reference to obtaining by legislation or otherwise contribution to the voluntary hospitals from the surplus funds of the Approved Societies. The hospitals have hitherto had no desire to extract obligatory subscriptions from the societies or from any other source. They came into being as the provision of the benevolent for the needy. Modern developments in medical and social science have, however, brought about totally different conditions. The Insurance Acts have placed the services of the general practitioner within the reach of thousands who rarely or never sought his aid; the hospitals are expected to supplement the work of the general practitioner, and are willing to coöperate with him to secure the desired end, the promotion of the health of the people. They cannot, however, do an increased amount of work upon incomes which have not increased but diminished. It appears to be consistent with good sense and common justice that the representatives of those who benefit by the work done should contribute to pay for it. It is not consistent with justice that those who rightly send their patients to be treated should be paid for their services, and that the hospitals who undertake the resulting obligation to treat should be driven into bankruptcy by so doing. The necessary legislation should be forthcoming.

Drugs to Induce Miscarriage.

A woman named Halle, 33 years of age, was sentenced recently at the Central Criminal Court to five months' imprisonment in the second division for administering to herself drugs in order to procure miscarriage. She had been denounced to the police by an anonymous letter. In passing sentence Mr. Justice Avory pointed out that in such cases the offence was the same whether an instrument was used or drugs taken, and that for a woman to procure abortion on herself was a serious crime. He might have added to this public warning that given in THE LANCET of Jan. 21st, 1899, p. 182, that no drug capable of being used by quacks in compounding their concoctions will be effective to procure miscarriage unless taken in quantities that will endanger life or seriously endanger health. This was published at the time of THE LANCET'S campaign against the sinister trade of quack abortionists,[1] which succeeded in banishing their advertisements from the pages of reputable newspapers.

Æsthetic Surgery.

A fine of £20 with £10 10*s.* costs was imposed by Mr. D'Eyncourt at Marylebone police court recently upon C. H. Willie, against whom the Medical Defence Union had obtained a summons for falsely using the title of doctor, implying that he was registered under the Medical Acts. The defendant described himself on a name-plate as "Dr. Willie, specialist," and carried on business as a "practitioner in plastic or æsthetic surgery," professing to remove marks of old age, scars,

[1] THE LANCET, 1898, vol. ii., pp. 1570, 1651, 1723, 1807; 1899, vol. i., pp. 182, 327, 717, 855, 908, 1739; vol. ii., pp. 111, 174.

and other blemishes from the faces of his customers. It was stated in his defence that he had gained experience in America and Paris, and that he "had held" a licence for face treatment from the L.C.C. A qualification mentioned was an honorary degree from the Oriental University, Washington. In fining him the magistrate observed that it was not for him to judge as to the success of the defendant's methods, which seemed to him to be highly dangerous.

Control and Drunkenness.

A question was asked recently in the House of Commons by Colonel Sir Arthur Holbrook, M.P., as to whether statistics were available showing the comparison in the number of convictions for drunkenness in controlled and uncontrolled areas; and whether the percentage of such convictions was lower, for example, in uncontrolled Herefordshire, than in controlled Worcestershire, and in uncontrolled West Suffolk than in controlled East Suffolk. The Home Secretary's answer was to the effect that all available statistics would be found in the annual volumes of Licensing Statistics, of which the volume for 1920 is now obtainable. Accurate comparison would, however, be difficult for many reasons, including the fact that the scheduled areas do not necessarily correspond with the areas for which figures are shown. This seems equivalent to a negative reply, but after all, whatever might be shown by the figures asked for, they would be unlikely to convert the more stalwart advocates of decontrol or of continued control respectively to the views of their opponents. After all, either side may be right, but figures alone, without full particulars of social and industrial conditions, prove very little in such a case. At present it is open to the advocates of continued control to say that it has been used in certain districts because they require it, and that Herefordshire and West Suffolk are to be congratulated not because they have not been controlled but because they have not needed it. On the other hand, the figures for Worcestershire and for East Suffolk, after a year or two without control, may some day supply an answer to one side or the other such as it has never had at its command before, and may prove either that control is an effective weapon for promoting temperance, or that it is of negligible importance to that end. The case for or against control may also be better established than by statistics of convictions.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

School Instruction in Venereal Disease.

THE Council of the Department of the Seine is considering a suggestion referred to it by the Société de Médecine Publique et de Génie Sanitaire in regard to introducing into the school syllabus some instruction in venereal diseases and their consequences. It appears necessary to the Société to warn youths and girls against the dangers of venereal diseases before leaving school, when they should be told that abstention from non-conjugal sexual connexion is the best of prophylaxis as well as a moral duty. The Société also emphasised the necessity of pointing out to adults and more especially to soldiers the safety that derives from the use of specific ointments, recommending only those of which the formula has been officially tested and proved.

Prophylaxis Against Influenza.

Mr. R. Dujarric de la Rivière made a communication on the prophylaxis of influenza at a recent meeting of the Société de Médecine Publique et de Génie Sanitaire. He accepted the initial cause of influenza to be a filtrable virus, the complications being due to bacterial secondary infections. Prophylaxis should concentrate on general measures directed against the transmission of the virus and on special measures of protection against the complications. The public should realise the necessity of temperance in alcoholic consumption for every individual living in an epidemic area. The danger should be indicated of excessive use of antiseptic gargles and nasal washes in causing inflammation, mucous irritation, and so diminishing resistance to infection, as well as the value of frequent washing of face and hands and of disinfecting dwellings. Cats and dogs had been shown to transmit the virus, and in an epizoötic of horses hæmoculture had revealed an organism similar to Pfeiffer's bacillus, associated with pneumococcus and streptococcus. The blood serum of convalescent horses had shown definite therapeutic action when injected into patients suffering from influenza. The author insisted on the need of isolating suspects as well as well-recognised cases during any local out-break and treating them in fever hospitals or in special blocks of general hospitals. Doctors and nurses should wear overalls and masks when on duty. Nurses should wash their hands with surgical care when going off duty, and doctors should do the same on leaving the wards. Mr. Dujarric de la Rivière went on to give instances showing that convalescing patients are not likely to contaminate other people. He recommended polyvalent vaccine against complications. Immigrants should be refused admission from any country suffering from an epidemic of influenza, and he regretted that no international conventions had yet insisted on quarantine regulations. In the event of an epidemic a regular mobilisation system should be arranged, this mobilisation comprising extempore hospitals of hutments and tents, the requisition of cars to transport patients, and prohibition of public gatherings. In non-epidemic times the public should be instructed in schools, through the distribution of pamphlets and by special cinema films at frequent intervals.

Periodic Medical Examination of School Children.

The Conseil Municipal de Paris has decided to ask its school medical officers to undertake a general medical examination of Paris school children every two months, and to record the condition of the mouth and teeth on a special sanitary card. When necessary, the children will be sent to dental surgeries selected for the purpose by the authorities.

August 13th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Relation of Alcoholism to Crime.

AT a meeting of the Society of Medical Practitioners, Dr. Geró, medical expert attached to the law courts, reported that of 94 individuals charged with homicide or attempted homicide, examined by himself, there were six malingerers and four persons who were wrongly supposed to be the subject of mental defects. Of the remaining 84 criminals only 14 were females. The following conditions of health were noted: one case of pregnancy, with mental derangement, one of morphiomania, one of hysteria, nine cases of delusions of persecution, seven of various states of mental disorder, eight of hysteria or epilepsy, 13 of various diseases either supposed or known to have an effect on the brain, 10 of mental defect, and 34 of alcoholism. Dr. Geró emphasised the fact that alcoholics formed more than a third of the total number of persons charged with homicide. He added that an examination of the antecedents of criminals grouped under other headings would show that many of the epileptics and mental defective subjects were the children of alcoholic parents. He also pointed out that acts of extreme violence might be committed not only by habitual inebriates but also by persons in a state of occasional alcoholic intoxication, in illustration of which he quoted cases.

Pellagra in Hungary.

In a recent report of the public health service of the south-eastern part of Hungary is noted the

appearance and rapid spread of pellagra. The disease, generally held to be due to eating maize, is therefore appearing in a country where the peasants eat bread made from wheat and corn. Formerly, when Transylvania was a part of Hungary, pellagra was common, and maize was the staple food of the Roumanian peasantry. The maize is rendered unwholesome by modern intensive methods of cultivation, the grain being harvested while still unripe, with the result that putrefaction occurs. An explanation of the appearance of pellagra amongst the wheat-consuming peasants was provided by a noted veterinary surgeon, who maintained that the disease was spread by the consumption of pork, the swine from which the pork was taken having become diseased through being fed on unwholesome maize. In parts of Italy, Lombardy, and Piedmont, especially, and also in Moldowa (Roumania), pellagra is even more common than in Hungary. The Hungarian Government has distributed wheat flour among the indigent inhabitants of Southern Hungary. This year's outbreak of the disease is not severe, although some patients suffer from mental disturbance, which does not yield readily to treatment. Many of the sick recover when supplied with wholesome food.

Excessive Heat in Hungary.

The summer heat this year has been excessive, the midday temperature being as much as 45° Centigrade, the highest figure for 15 years. In addition to the ordinary inconveniences of extremely hot weather, there are also those of scarcity of water, particularly in provincial places where the supply is derived from wells. Rivers are almost dried up, and if the drought continues, pollution of the remaining water and consequent spread of typhoid and dysentery are feared. Several sunstroke cases have been reported in the capital.

Treatment of Nervous Breakdown.

The number of nervous breakdowns consequent upon changed political and economic conditions has been largely increased, and recently the Neurological Section of the Medical Society held a meeting to discuss the treatment of neurasthenia. During the discussion Dr. Frey advised the use of psycho-analysis, and the selection of amusements according to the results of examination. Cards and other indoor games, open-air sport, plays, and conversation on subjects which arouse the patient's interest, frequently have a beneficial effect. Dr. Frey has found visits to friends or complete change of environment valuable. When treating patients in their homes, he has often found it unwise to relieve women of light household duties, or restrict men from moderate exercise. Exercise and occupation (in the sense of pastime) have a disciplinary effect on patients, the curative value of which is not at present sufficiently recognised, but which he believes to be of inestimable value. Careful selection of cases is necessary. If women were taught dressmaking, millinery, dairy work, basket-weaving, the lighter forms of wood-carving, drawing, painting and clay modelling; and if men were taught pipe-fitting, pattern-making, mechanical drawing, carpentry, modelling, gardening, stenography, typewriting, painting (signs and frescoes); and if both men and women were to have a choice of work—then Dr. Frey believes our institutions for the treatment of mental diseases would speedily be transformed.

The Suicide-rate in Budapest.

The year 1920 has shown an increased number of suicides committed and attempted for reasons not far to seek. After her defeat in the war, Hungary has lost about half her territory, and more than half of her population; there is very grave trade depression; the change of frontiers has deprived the country of a good part of its industrial markets, and has frequently interfered with family life, whilst the means of communication which remain are difficult to come by, and the getting passports entails much time, trouble, and expense. Even postal communication with the lost territories is uncertain; a letter travelling 10 miles from Hungary into Roumania takes 7 to 14 days, owing to the censorship. Under these conditions it is not to be wondered at that the number of suicides in the past year amounted to 540, 13 per cent. more than in 1919; of these 391 were men, 146 women, and 3 children. The suicides of children are increasing in frequency; the younger of these three was 11, the oldest 14. The causes appeared to be desperation at loss of parents and cruel treatment by employers. The oldest person who killed himself was 90 years, the highest number of suicides was 103 in November and 107 in December.

Campaign to Abolish Brothels.

On July 29th closed the International Congress for the Abolition of White Slave Traffic. A majority of members of the Congress declared that it is most desirable that the keeping of brothels, already abolished in several countries, shall be so treated throughout the world. Mr. Graaf, the Dutch delegate, made the startling statement that in the public brothels of Amsterdam there are imprisoned 72 foreign girls under age. In one of the Amsterdam brothels a printed note was found which contained a list of all the white-slave traders of Europe, together with a list of places where ready markets could be found. The Congress laid special stress upon the necessity of extending protection to coloured women as well as whites, and of carrying the fight against white-slave traffic into the colonies and dependencies of European States.

Emigration of Pharmacists from Budapest.

The slump in the pharmaceutical trade and industry is bitterly felt by chemists' assistants, who are unable to find situations. From 400 to 500 assistants, all holding the diploma of the University of Budapest, have been out of employment for from 6 to 12 months without result. Of these men, 150 assistants have resolved to emigrate, and the first group of 54 has already left for the United States. As the education of Hungarian pharmacists stands at a very high level, it is likely that in America they will find situations without much difficulty.

INDIA.

(FROM OUR OWN CORRESPONDENT.)

PROVINCIALISATION OF MADRAS HEALTH OFFICERS' SERVICE.

MENTION was made in a previous letter regarding the appointment of a Consultative Council of Public Health to enable the Government to maintain touch with non-official opinion concerning general principles of health policy, and particular questions of medical relief, preventive medicine, &c. The second meeting of the Consultative Council was recently held to consider the reports of the five committees of the Council. One of the most important subjects reported on by the Education and Research Committee was that of the provision of trained health officers. In 1913 the Government decided that health officers might, for the time being, be provided for municipal towns whose population exceeded 30,000, and for towns classed as special—e.g., Ootacumund, Coonoor, and Kodaikanal.

As there were 31 such towns, the health service would eventually consist of 31 appointments. As a first instalment Government sanctioned the posting of health officers in 10 of the most important municipalities of the Presidency, but applicants were so scarce that in 1920 only three towns were supplied; several men who had taken up one or other of the available posts had left them, being disgusted with the conditions of service which they were expected to accept. This was doubly unfortunate, for in that year the Madras University had revised its syllabus for the degree of Bachelor of Sanitary Science, bringing it up to the standard of a British D.P.H., and several candidates had taken the degree. The health officers are purely municipal servants with small prospects of promotion and subject to the whims and fancies of

members of the Municipal Council who, more often than not, have their own axes to grind when any question affecting the health of the town is brought up by the health officer.

The local and municipal conference at its meeting in July, 1920, discussed the whole question at considerable length, and in spite of a strong feeling that local bodies should have full powers of appointment, &c., in regard to their officers, a resolution was passed to the effect that the posts of health officer be provincialised, subject to the same conditions in regard to control, postings, and transfers as those of medical officers—viz., that the powers of control over their servants vested in local bodies should not be prejudicially affected, and that the Surgeon-General should ordinarily consult local bodies in the matter of posting and transfers. This meant that health officers should be lent to local bodies in the same way that civil assistant surgeons and sub-assistant surgeons are lent at present.

Government Adoption of the Proposal.

The Financial Relations Committee and the Public Health Board of Madras both endorsed the recommendation, and in view of the consensus of opinion the Government have recently decided to accept the proposal; orders have now been issued to the effect that the Government consider that there should be two grades of health officers, whose appointments should be included in one or other of the two existing provincial cadres of civil assistant surgeons and sub-assistant surgeons. First-class health officers should possess the L.M.S. degree of the University of Madras or some other equivalent or higher medical qualification; second-class health officers should possess the L.M.P. diploma or an equivalent qualification, and both classes should have undergone a year's special training. Special arrangements will be made for instituting a suitable course of training, with effect from July 1st, 1921, to which all assistant and sub-assistant surgeons will be eligible. Health officers will draw pay on the scale fixed for the service to which they belong, an additional local allowance being made as compensation for loss of private practice.

Further orders state that the rate of local allowance will be calculated with reference to the total service of the officers as civil assistant surgeons or sub-assistant surgeons, not as health officers. Health officers employed in municipalities will also be granted fixed conveyance allowances,and those employed under local boards will draw travelling allowances under the ordinary rules in the Civil Service regulations. The number of appointments to be sanctioned depends mainly on the requirements of local bodies; the Government consider that health officers of the first class should ordinarily be employed under all district boards, in municipalities with a population of 50,000 or more, and in important sanatoriums, whilst in other municipalities second-class health officers may be employed. The question of the proportion of the salaries of health officers to be paid from provincial and from local funds, with the bearing on that question of leave and pensionary contributions by local bodies in respect of officers lent to them. is under separate consideration. With a view further to improve the prospect of health officers the Government propose that in future recruitment to the grade of Deputy Sanitary Commissioner should ordinarily be made from the ranks of health officers possessing the requisite qualification. The Government will be informed as early as possible which of the local bodies are willing to employ health officers, and whether first- or second-class health officers are required.

Training of Health Officers.

It has now been decided that health officers should be provided for 25 district boards and 78 for municipalities, 13 of these being first class and 65 second class. The Government have approved the Surgeon-General's proposal that the syllabus laid down for the Madras University B.S.Sc. degree should be adopted for the training of all health officers; and the separate course of training formerly prescribed for second-class health officers should be abolished. They have also decided that every facility should be given for research work and the investigation of disease, and that for this purpose they should be provided with a small laboratory and a microscope. The first class held under these new rules commenced on July 4th and 20 suitable candidates were selected for the course from a large number of applicants. The medical college is unfortunately unable to accommodate a greater number, and it will therefore be a few years before a sufficient number of trained men are available. It is of some satisfaction, however, to know that this problem is at last on the way to solution.

Madras, July 20th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Folie Circulaire.

A CASE presenting some unusual features has just occupied Mr. Justice Street in Sydney, sitting as Judge in Lunacy. The wife of a man of academic distinction, resident in New Zealand, had in 1912 exhibited such mental peculiarity as to require special detention. She was allowed out with a nurse the following year, but relapsed and was again detained in 1914 and 1915. As there was no suitable private mental institution in New Zealand, her husband arranged for her transfer to New South Wales, and she entered Mount Saint Margaret's Hospital in 1915 under fresh certificates. She was allowed out in 1916, but was again admitted in 1917, and once more in 1919. In 1921 she was transferred to the State Mental Hospital at Gladesville. The present proceedings took the form of a special judicial inquiry at the instance of Mr. G. S. Thompson, F.R.C.S., who alleged the lady was perfectly sane. Mr. Thompson had been consulted professionally in October, 1920, by the patient, who was then on probation and living privately. Mr. Thompson did not know anything of her mental condition. He advised her to go into hospital for the purpose of an operation. The lady in whose care the patient was then living told him she was on probation and under the care of Dr. A. Davidson. Mr. Thompson stated that he had then telephoned Dr. Davidson, but that gentleman declined to recognise him in the case and refused to inform him of the patient's subsequent whereabouts. Mr. Thompson then began an agitation for a public inquiry, which resulted in the present proceedings. In cross-examination Mr. Thompson denied that he was allied to the Socialist party, but admitted he wore a red flower and lectured at Labour party meetings. Portions of a letter from Mr. Thompson to the Premier of New South Wales were read, in which were the following words:—"From the evidence before me it appears that something very improper is going on in this matter. The case requires sifting to the bottom. Mrs. —— is certainly not insane now, whatever her condition was. It is scandalous that certain persons who are gaining thereby should have power to kidnap people and keep them in prison at their own sweet will." Dr. Richard Arthur, M.L.A., Mr. Donald Fraser, M.B., and Dr. J. B. Nash, M.L.C., gave evidence that they had not found indication of the patient's insanity. Mr. W. G. C. Smith, M.B., Dr. Andrew Davidson, Dr. Eric Sinclair, Inspector-General of the Insane in New South Wales, Dr. Chisholm Ross, Dr. W. C. Williamson, and Mr. H. C. McDouall, Medical Superintendent at Gladesville, all having special alienist experience and training, testified that she was suffering from periodical insanity. Mr. Justice Street in giving judgment said that there were elements in the case which might excite suspicious people, but animadverted strongly on the language used by Mr. Thompson and his imputation of dishonesty against those in charge of the patient. He thought the latter's husband had been animated throughout by a desire to do the best. As to her

mental state, the judge said he ought to be guided by the specialists, and he refused to make an order for her discharge. The intervals proper for her removal from control should be left to the mental specialists. He would make no order as to costs. He did not think the proceedings had been necessary. The case excited great local interest.

Women Hospital Residents.

The committee of the Melbourne Hospital recently considered the question of limiting the number of women appointed as hospital resident medical officers. The system of appointment at the hospital is that those highest in the honours list at the final examinations assume office according to their places. Thus it might happen that every place would be occupied by women in the first 12 or 15 places. At present there are five women residents out of 12 positions. The committee, after deliberation, declined to disturb the existing regulation.

Obituary.

The death of Mr. H. M. O'Hara, F.R.C.S.I., has recently occurred. Although born in Australia Mr. O'Hara was educated for the medical profession in Great Britain, and returned as a young man, at once attracting attention as a bold and brilliant surgeon. He was for many years surgeon to the Alfred Hospital, Melbourne, and his operating day was a kind of early post-graduate class. On reaching the age limit he was made consulting surgeon. Mr. O'Hara was a President of the Surgical Section at the Australasian Medical Congress about 20 years ago. He was, apart from professional work, a very well-known figure in Melbourne owing to his physical proportions and his many social interests, which ranged from horse racing to amateur opera. Mr. O'Hara was married three times and has a son in the medical profession.

June 28th.

The Services.

AUXILIARY ROYAL ARMY MEDICAL CORPS FUNDS.

THE usual quarterly committee meeting was held on Friday July 22nd, at 11, Chandos-street, when eleven grants were made to cases in the Benevolent Branch for the orphans of officers, amounting to £474 15*s.* 4*d.*, and five grants in the Relief Branch for widows and children of the rank and file, amounting to £109.

These Funds are for the relief of widows and orphans of commissioned officers, non-commissioned officers, and men of the rank and file of the Royal Army Medical Corps, Special Reserve, Territorial Force, and new armies, and also for the relief of those who have been so severely damaged in the late war that they need help for the education of children. Requests for relief should be addressed to the Hon. Secretary, at the offices of the Funds at 11, Chandos-street, London, W. 1.

THE sword for colonels, Army Medical Service, and officers of the Royal Army Medical Corps, will in future be of the pattern authorised for infantry. Officers in possession of the existing pattern sword may retain it in wear. The gorget patches worn by the Army Medical Service are now of dull cherry cloth.

THE HEALTH AND COMFORT OF THE SOLDIER IN INDIA.

The Territorial Army can claim to have done much to ameliorate the conditions of service of the soldier in India. Prior to their "occupation" during the war electric light and fans were unknown luxuries in Indian barracks, hospitals, and bungalows, but as the result of insistent efforts, light and fans are now installed in all the principal cantonments. A large installation to serve the whole district has just started working in Peshawar and a similar installation should be working at Umballa before the end of the year. These things, and the wider employment of nurses, are very important medical reforms, affecting the health and comfort of the soldiers.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Commr. A. C. W. Newport, M.V.O., Surg. Lieut.-Commr. A. Lawrey, L.D.S., and Surg. Lieut. H. E. Y. White to the *Renown*.

ROYAL ARMY MEDICAL CORPS.

Lt.-Col. H. Hewetson retires on ret. pay and is granted the rank of Col.

Maj. C. R. L. Ronayne retires on ret. pay and is granted the rank of Lt.-Col.

Capt. D. G. Evans from Spec. Res. to be Capt.

Capt. J. L. Ritchie retires, receiving a gratuity.

G. L. K. Finlay, late temp. Capt., to be temp. Capt.

M. H. Carleton to be temp. Lt.

Officers relinquishing their commns.: Temp. Capts. J. T. Hill and F. J. R. Cowie.

Temp. Capts. granted the rank of Maj.: A. G. Welsford and C. Sullivan.

Temp. Capts. retaining the rank of Capt.: R. Hodson, D. E. Hearn, and H. L. C. Noel.

Temp. Hon. Capt. A. C. Delacroix retains the hon. rank of Capt.

SPECIAL RESERVE OF OFFICERS.

Capt. A. J. Gibson relinquishes his commn. and is granted the rank of Maj.

Capt. E. D. D. Dickson relinquishes his commn. and retains the rank of Capt.

TERRITORIAL FORCE.

Lt.-Col. A. G. Hay from 3rd Sco. Genl. Hos. to be Lt.-Col.

Lt.-Col. A. R. Wilson resigns his commn. and retains the rank of Lt.-Col., with permission to wear the prescribed uniform.

Maj. C. H. Lindsay, D.A.D.M.S., 55th (W. Lan.) Divn., to be Bt. Lt.-Col.

Capt. E. Alderson to be Maj.

Capt. T. S. Elliot resigns his commn. and is granted the rank of Maj.

Hon. Surg. Capt. C. T. Fox (late East Kent Yeo.) to be Capt.

Lt. C. S. Atkin (late R.A.M.C.) to be Lt.

The undermentioned Majs., having attained the age limit, are retired and retain the rank of Maj., with permission to wear the prescribed uniform: J. Robinson, C. S. de Segundo, J. F. F. Parr, and F. J. Oxley.

The undermentioned, having attained the age limit, are retired and retain their rank: Maj. J. E. B. Wells, and Capts. E. V. Phillips, F. Jeffree, A. Scott-Turner, C. Telfer, J. F. Farrow, and A. G. Wilson.

2nd Western Gen. Hosp.—Lt.-Col. Sir Wm. Thorburn, having attained the age limit, is retired, and is granted the rank of Col., with permission to wear the prescribed uniform.

Lt.-Col. E. S. Reynolds, having attained the age limit, is retired, and retains the rank of Lt.-Col.

Maj. A. Wilson, having attained the age limit, is retired, and is granted the rank of Lt.-Col.

Maj. R. B. Wild, having attained the age limit, is retired, and retains the rank of Maj.

Maj. A. H. Burgess resigns his commn. and retains the rank of Maj.

TERRITORIAL FORCE RESERVE.

Capt. W. J. Gray, from Gen. List, to be Maj.

Capt. D. Smith, from 2nd Lond. Sanitary Co., to be Capt.

INDIA AND THE INDIAN MEDICAL SERVICE.

Lt.-Col. to be Col.: W. Young.

Maj. C. Thomson, retd. list, to be Lt.-Col. retd. list.

Lt.-Col. A. M. Fleming to be actg. Col. while holding an appt. as A.D.M.S.

Maj. A. G. Tresidder to be actg. Lt.-Col. while comdg. an Ind. Gen. Hosp.

The King has approved the retirement of Bt. Col. W. W. White.

Major A. C. Ingram, professor of medicine, General Hospital, Madras, has proceeded on a year's leave; Major G. E. Malcolmson officiates for him. Lieut.-Col. James Masson, civil surgeon, has been appointed Superintendent of the Bhagalpur Central Jail. Lieut.-Col. R. A. Lloyd, civil surgeon, has been appointed to the executive and medical charge of Hoshangabad District Jail. Lieut.-Col. W. M. Anderson resumes his appointment as Chief Medical Officer, North-West Frontier Province. Lieut.-Col. S. E. Prall and C. M. Goodbody retire from the Service. Lieut.-Col. E. Ryan has been appointed Honorary Surgeon to the Viceroy. Lieut.-Col. J. G. G. Swan, C.I.E., has vacated the appointment of superintendent District Jail, Ferozepore. Capt. S. R. Rao, deputy sanitary commissioner, officiates as Sanitary Commissioner of Assam, vice Mayor Taylor, granted a year's leave.

Public Health Services.

Hospital Collections in London.

A CIRCULAR has been issued to the London hospitals by King Edward's Hospital Fund dealing with the subjects of collections from employees and the coördination of appeals for support. The Fund has lately coöperated with the London Regional Committee of the British Hospitals Association, the Hospital Sunday Fund, the Hospital Saturday Fund, and the League of Mercy in discussion of these points and the various factors bearing upon them. The King's Fund Policy Committee and the Conference of Central Agencies have decided not to pass binding resolutions until the discussion has been completed, and evidence on a good many aspects of the subject is still inadequate. The circular contains outlines of the discussions at present proceeding. It is suggested that for purposes of collection from employees the metropolis (within nine miles of Charing Cross) be divided into hospital areas around key hospitals, and that the willingness of these hospitals to coöperate with the conferring agencies be ascertained; that when an area with a key hospital is adopted, a committee be formed consisting of local representatives of the organisations concerned to facilitate the securing of maximum collections; and that a general arrangement might be made whereby the coöperating hospitals should be assured of a due proportion of the proceeds of collections.

No proposals have yet been formulated for a change in the existing practice as regards weekly contributions. A list of London hospitals, geographically arranged, with the adjacent municipal areas, Hospital Saturday Fund areas, and League of Mercy areas, is enclosed with the circular to facilitate consideration of the existing facts. Some hospitals already contemplate the holding of local conferences, and the King's Fund Policy Committee holds itself ready to receive observations from hospitals, and to assist in the summoning of such conferences. With regard to coördination of appeals, no general statement has yet been prepared; in the meantime the individual hospitals remain at liberty to act on their own judgment in the matter of appeals, other than for capital expenditure, without reference to the King's Fund.

Private and Panel Practitioners.

Our correspondent, "Non-Panel," in THE LANCET of August 13th disputes our contention that the practice of charging fees to insured persons by non-panel practitioners is seriously prejudicial to the medical service of the insured. He makes a number of good points, but he misses the essential one. It may well be that such an arrangement satisfies all parties, but it leaves the insured person with the impression that by going to the non-panel practitioner and paying fees he is getting a superior form of treatment. This impression certainly creates a prejudice against the treatment provided by the Insurance Act. By not putting his name on the medical list the non-panel practitioner limits the choice of insured persons, and those of his patients who are insured persons have to pay a second time for what is guaranteed to them by the Act. Should the doctor of his choice not be on the panel any insured person may apply to make his own arrangements, and may receive his medical benefit from the non-panel doctor under certain conditions. The doctor who accepts these conditions naturally has to guarantee that his attendance on the insured will not be inferior to that provided under the Act by insurance practitioners.

ANNUAL REPORTS OF M.O.H.

Reading.

THIS report for 1920 describes very fully the complete health organisation which Dr. A. Ashby, after 33 years' service, has left to his successor, Dr. H. J. Milligan, to carry on. Dr. Milligan, in his introductory letter, says: "Appointed in the year 1887, Dr. Ashby was medical officer of health for a period of 33 years, a period which, the perusal of this report will show, witnessed enormous strides in the public health of the district. In June, 1920, he was appointed consulting medical officer while still retaining the office of public analyst."

The year under review shows an improvement even on the highly satisfactory returns of previous years. In respect of death-rate from all causes, infant mortality rate, and tuberculosis death-rate, Reading compares very favourably with other large centres of population.

The housing shortage continues and considerable numbers of the population are still compelled to live under very undesirable conditions. Certain courts containing 70 houses which are very old and in some cases bordering on collapse have to remain occupied, and two unhealthy areas comprising 59 and 211 houses respectively, cannot be dealt with until the acute housing shortage is relieved. The council have adopted a scheme for the provision of 600 houses. Work has been begun on 162 and at the end of the year 50 were completed and occupied. There were also 28 houses built by private enterprise, for 21 of which a subsidy was granted. "The general standard of housing in the district is good. Where the actual structure of the houses often leaves much to be desired the situation is frequently relieved by the general lay-out scheme, most of the streets being wide and the majority of the houses having gardens." The occupations—biscuit manufacturing, engineering, railway work, seed growing, printing, lithographing, &c.—"have no special determining influence on the health of the inhabitants." The Registrar-General's estimate of the population is, for birth-rate 95,387 and for death-rate 95,006. The birth-rate, 23·8, is the highest recorded since 1905 and has risen from 16·7 in 1919. The death-rate 10·7, the infant mortality rate 66·7, and the tuberculosis death-rate 0·96 have to be compared with rates for the preceding decennium of 12·66, 83·3, and 1·32 respectively.

The water-supply derived from the river Kennet is passed through mechanical filters and is, in addition, chlorinated by the use of a solution of bleaching powder. The sewage is at present treated by broad irrigation on the corporation manor farm, but it has been decided to adopt the "activated sludge" system. The extension of the sewerage system to Tilehurst will enable the 563 pail-closets to be converted into water-closets. "The work of emptying pail-closets and cesspools is done by the householders and is carried out without nuisance."

Examination of milk samples for tubercle bacilli was given up during the war and is to be resumed. Inability to obtain convictions for milk samples deficient in milk fat varying from 17·7 to 13·3 per cent., shows the need for alteration in the law. Only about 17 per cent. of the infants born in 1919 were vaccinated. There is difficulty in getting early notification of tuberculosis; arrangements have been made for the treatment of pulmonary and non-pulmonary tuberculosis at the Headington sanatorium extension of the Radcliffe Infirmary, Oxford. A pavilion at the isolation hospital is in use chiefly for advanced cases. The school dentist attends to the teeth of tuberculous patients. During the year 491 new cases of venereal disease were treated at the V.D. clinic established at the Royal Berkshire Hospital for Berkshire, Wiltshire, and Reading. There are four centres for infant consultations, an antenatal clinic opened in October is being well attended, and a maternity home was opened in September. Owing to the extreme trade depression £1250 (net) was spent under the Milk Order, 1919, during the year ending March 31st, 1921.

For a "garden city" like Reading the death-rate of 6·5 per 1000 births for diarrhœa and enteritis under 2 years seems rather high, and the damage rate for 15 cases of notified ophthalmia neonatorum is also high—viz., the sight of one eye permanently affected in two cases and the sight of one eye completely lost in another.

Correspondence.

"Audi alteram partem."

WAR EMERGENCY FUND OF THE R.M.B.F.: GRANTS FOR EDUCATION.

To the Editor of THE LANCET.

SIR,—The War Emergency Fund of the Royal Medical Benevolent Fund was founded in 1916 to assist medical men after their service abroad when they returned to practice. The Committee have already expended £18,000 in grants; they still have ample funds in hand and are prepared to make liberal grants towards the cost of education, and, if necessary, to pay the school fees of the sons or daughters of any medical man who, as the direct consequence of having held a commission in the Army Medical Service during the late war, finds himself unable to give as good an education to his children as he would otherwise have been able to do. The Committee are also prepared to consider applications for grants in such cases in order to aid in education at the Universities and the Medical Schools, and in training for professions.

I am, Sir, yours faithfully,

G. NEWTON PITT,
Hon. Sec.

11, Chandos-street, W.1, August 14th, 1921.

ÆTIOLOGY OF ASYLUM DYSENTERY.

To the Editor of THE LANCET.

SIR,—The valuable contribution to the ætiology of bacillary dysentery in asylums by Dr. W. S. Dawson and Dr. W. Moodie, published in THE LANCET of July 30th, must appeal to all interested in asylum administration, for the emphasis which it lays on the importance of routine bacteriological examination of the stools from all cases of diarrhœa. There is, however, another aspect of the problem of asylum dysentery which, I think, merits careful consideration before adopting the somewhat drastic measure of complete and permanent isolation of all cases. In any case of infection there exist two varying factors—the degree of susceptibility of the individual to infection, and the degree of virulence of the pathogenic organism. If we postulate that, in the insane, opposition to bacterial infection is lessened, it becomes clearly a matter of importance to investigate the possible source or sources of this failure of resistance, with a view to adopting the appropriate remedy.

Recent experimental research into the influence on nutrition of certain accessory food factors gives a new importance to the subject of asylum dietaries, and raises the question whether certain diseases prevalent in mental institutions may not own their perpetuation to an inadequate supply of vitamins. It needs but a small acquaintance with asylum life to learn that it is a particular class of case, the chronic demented inmate, who is liable to attacks of dysentery; and it is also a familiar fact that members of the nursing staff are almost never attacked, in spite of their constant attendance on such cases and their sometimes imperfect acquaintance with the principles of disinfection. The former class are compelled by their circumstances to accept a diet which, though adequate in amount, cannot satisfy the individual craving for certain articles of diet, a craving which possibly may be interpreted as an instinctive attempt to obtain certain essential food factors. Apart from such a theoretical consideration, it is a matter of common knowledge that the supply of a well-balanced diet for the insane becomes increasingly difficult during the winter months, when fresh vegetables are difficult to obtain, and it is a significant fact, as Dr. Dawson and Dr. Moodie point out, that the highest incidence of dysentery occurs during the period of January to April.

By feeding pigeons on a diet deficient in proteins, fats, and certain accessory food factors, McCarrison has shown that changes are produced which favour infection of the mucous membrane of the bowel by pathogenic organisms. It is possible, as he suggests, that these experimental results are applicable in some degree to man, and that a long continued sub-minimal supply of accessory food factors may lead to conditions favouring the development of gastro-intestinal disorders. During the late war I had at one period charge of a large number of prisoners of war, many of whom suffered from both dysentery and scurvy; in such cases the generous diet of a British hospital by itself produced effects so striking that I became convinced that dysentery may, in part, be a "deficiency" disease. The final proof of such a conception will be forthcoming when it is shown possible to diminish the spread and relapse of asylum dysentery by a more careful attention to the *qualitative* deficiencies of asylum diet, and it is on these lines that work is now proceeding in this institution.

It may be true that dysentery is to a certain extent spread by individuals in good health who harbour the bacilli, but in my experience the most important source of outbreaks is the presence of mild relapsing cases, who are not in the true sense of the word carriers, and it is surely a policy of despair to recommend their permanent isolation in preference to measures directed to their cure.

I am, Sir, yours faithfully,

R. M. STEWART.

Whittingham Asylum, August 8th.

THE WEANLING IN UPPER EGYPT.

To the Editor of THE LANCET.

SIR,—I was interested in the letter from Dr. W. E. Nickolls Dunn which appeared in THE LANCET of May 28th, as his remarks upon the weanling in Upper Egypt apply to the natives of the Northern Provinces of Nigeria, where also gastric ulcer, appendicitis, and carcinoma are almost unknown diseases. There is, however, a marked difference between the condition of the teeth of our natives and of those of the country Arabs of Upper Egypt, as will be seen from the following figures upon incidence of pyorrhœa, prepared by Dr. J. W. Thomson and myself in 1913 by examination of 400 prisoners in two large gaols:—

Number with pyorrhœa	..	317 or 79·2	per cent.
,, with carious teeth	..	82 ,, 20·5	,,
,, with teeth missing	..	87 ,, 21·7	,,

This incidence of pyorrhœa and dental caries among our natives is probably due to the fact that their diet, after weaning, consists almost entirely of cooked food—guinea-corn ground and made into stiff porridge, with oil (ground-nut or palm-oil) boiled with vegetable and peppers and sometimes meat or fish; yam or cassava may replace the guinea-corn; half-cooked or "toasted" meat is taken, as is shown by the frequency of tænia infections. Practically no fresh fruit is available, but sugar-cane is chewed when in season. Upon this diet the bowels act naturally two to three times a day, and relief is immediately sought in the event of constipation. In other words, the native, like a herbivorous animal, lives upon a bulky diet and opens the bowels frequently. I would, therefore, tentatively suggest that absence of intestinal stasis rather than absence of dental caries may be the reason for the comparative scarcity of gastric ulcer, appendicitis, and carcinoma.

My native work, largely surgical, involves treatment of roughly 90 per cent. natives of Northern Nigeria and 10 per cent. coast natives. The latter correspond to the Cairo natives mentioned by Dr. Nickolls Dunn, in that they live largely upon European food, including bread made from flour ground in England. Case incidence of gastric ulcer, appendicitis, and carcinoma may be judged from the following figures of the last 750 surgical operations I have performed in Nigeria.

No cases of gastric ulcer. Never seen post mortem during nine years' work.

Four cases of appendicitis or appendix abscess. Two of these were in coast natives and should be excluded. One doubtful case of retro-cæcal suppuration, one true appendix abscess in N. Nigerian.

Forty-two benign tumours: Lipoma, fibroma, fibro-myoma chondroma, osteoma, goundou, papilloma, polypi, adenoma of thyroid.

Five locally malignant tumours: Endothelioma (4), submaxillary, parotid, &c.; epithelial odontome (1) in coast native.

Three malignant tumours: Sarcoma of skull in coast native, 1; of femur, 1; of humerus, 1. Carcinoma, no cases seen among gynæcological work, though chronic endometritis very common.

Colleagues working in the Southern Provinces of Nigeria have told me that carcinoma, although not common, does occur.—I am, Sir, yours faithfully,

W. B. JOHNSON,
July 9th, 1921. West African Medical Staff.

UNIVERSITIES' LIBRARY FOR CENTRAL EUROPE.

To the Editor of THE LANCET.

SIR,—May I plead in your columns for the needs of the Universities' Library for Central Europe, which has just completed the first year of its work?

Owing to the state of the foreign exchanges, English books are practically unobtainable in many parts of the Continent. The Universities' Library has been formed in order to supply, at any rate to some extent, the more pressing needs of continental universities for books and periodicals in every department of art and science. The library is supported entirely by voluntary donations of money and books. It has centres in Austria, Czecho-Slovakia, Hungary, Germany, Poland, Esthonia, Finland and Roumania, and from all of these requests for specific works in English have been received, amounting in all to more than 20,000 titles. Information as to the requirements of any particular centre will gladly be sent on application.

A representative who has recently visited the Continent reports an intense desire on the part of foreign universities to obtain English periodicals and books, as also a sincere wish on their part to establish contact with the intellectual world outside. Most people have books for which they have themselves little or no further use, but which would be highly valued in Central Europe. If your readers would be good enough to look on their bookshelves and take out those volumes which they think they could do without, even at some sacrifice to themselves, and would present them to the Universities' Library, they would help directly in relieving this intellectual distress. Donations of money are also greatly needed.

Mr. B. M. Headicar, librarian to the London School of Economics and Political Science, Clare Market, Kingsway, W.C. 2, is acting as secretary for the Universities' Library for Central Europe, and will gladly supply any information or forward any books or periodicals which are sent to him.

I am, Sir, yours faithfully,

JANET E. LANE-CLAYPON,
August 6th, 1921. Member of the Executive Committee.

ZINC ELECTROLYSIS FOR ENLARGED TONSILS.

To the Editor of THE LANCET.

SIR,—In an annotation in your issue of August 6th there is a reference to the treatment of enlarged tonsils by X rays. May I mention as another procedure zinc electrolysis of the base of the tonsil. This is done by transfixing the base with a fork with five or six zinc-coated prongs. The fork replaces the blade in a Mackenzie's guillotine, which is carefully insulated by painting with enamel. The fork is attached to the positive terminal of a rheostat, while the negative electrode makes contact with the tonsil in its mesial part. One application of a current of 200 milliampères for three minutes is sufficient to cause destruction of the tonsil, which sloughs away without hæmorrhage and without inflammation.

I am, Sir, yours faithfully,

Devonshire-place, W., August 11th. A. R. FRIEL, M.D.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Poison Antidotes Bill.

THE text has been published of the Poison Antidotes Bill. The measure consists of three clauses. Clause 1 provides that "where any poison is sold by retail which under any Act or order thereunder is required to be labelled 'Poison' there shall be printed on or attached to the receptacle containing such poison a description of an antidote or antidotes, with the usual dose or doses thereof." Clause 2 states that where any person sells any such poison "without the receptacle containing the same having a description and the usual dose of the antidote thereof printed or labelled thereon he shall be liable on conviction before a court of summary jurisdiction to a penalty for each offence not exceeding five pounds." Clause 3 provides that the Act is not to apply to Ireland.

HOUSE OF LORDS.

MONDAY, AUGUST 15TH.

Criminal Law Amendment Bill.

The House considered the Commons' amendments to the Criminal Law Amendment Bill. The Commons' amendment providing for the insertion of a new clause, making any act of gross indecency between female persons a misdemeanour, was negatived. Several other Commons' amendments were agreed to, including that giving power for the deportation of aliens for procuration. The amendment giving a judge power to order the trial referring to a charge of alleged incest to be heard in camera was negatived.

Licensing (No. 2) Bill.

The Licensing (No. 2) Bill was read a third time and passed.

War Pensions Bill.

The War Pensions Bill was read a third time and passed.

HOUSE OF COMMONS.

TUESDAY, AUGUST 9TH.

Travelling Grants to Panel Practitioners.

Mr. LAMBERT asked the Minister of Health the terms of the regulations under which grants were made to medical men by the Insurance Acts for mileage and travelling.—Sir A. MOND replied: I am sending the hon. Member a copy of the Regulations from which he will see that a Central Mileage Fund is constituted, into which the sums available for mileage are paid (Article 19), that a committee, known as the Distribution Committee, consisting of insurance practitioners and other persons, reports to me as to the basis on which the sums in the Central Mileage Fund should be distributed amongst insurance committee areas (Article 20), and that the sums allocated to each area after consideration of that Report are distributed amongst the practitioners in accordance with a scheme prepared jointly by the local panel committee and the insurance committee, which is subject to my approval (Article 21).

Overcrowded Areas.

Mr. TREVELYAN THOMSON asked the Minister of Health if he was aware that it was stated at the recent international conference on tuberculosis that improved sanitation and adequate housing accommodation were amongst the most important means that could be adopted for reducing tuberculosis; and, if this was so, in the interests of economy, would his department sanction the building of more houses in those districts which were badly overcrowded, and where labour and materials were available for more houses than had at present been sanctioned.—Sir A. MOND replied: In so far as it is possible to sanction the erection of further houses within the limitations of the Government's housing scheme, which have been laid down, I shall certainly do what I can to meet the needs of the more seriously overcrowded areas.

WEDNESDAY, AUGUST 10TH.

Naval Hospital, Plymouth.

Sir CLEMENT KINLOCH-COOKE asked the Financial Secretary to the Admiralty whether he was now in a position to state what steps had been taken to improve the accommodation for the sick-berth staff at the Royal Naval Hospital, Plymouth.—Mr. AMERY replied: It has been decided to construct new quarters for the sick-berth staff at the Royal Naval Hospital, Plymouth, as soon as financial conditions permit.

Service Grants to London Voluntary Hospitals.

Mr. GILBERT asked the Minister of Health what were the amounts paid in the years 1914 to 1919, respectively, as grants in aid to the London voluntary hospitals in con-

sideration of their treating sick and wounded soldiers and sailors.—Lieut.-Col. Hon. G. F. STANLEY (Financial Secretary to the War Office) replied: The amount paid during the period in question to the London voluntary hospitals for the maintenance and treatment of soldier patients was about £880,000. I regret that I cannot give the sum paid in respect of each year, but I hope this will be sufficient for my hon. friend's purpose.

The Size of a Panel.

Mr. PURCHASE asked the Minister of Health the maximum of patients a doctor might have upon his panel; and to what extent he might increase this number by having assistant doctors.—Sir A. MOND replied: The limit of the number of insured persons whom an insurance practitioner may have on his list is determined by a scheme made for each area by the Insurance Committee and the Panel Committee jointly, and the extent to which the limit may be increased where the doctor engages one or more permanent assistants is determined by the Insurance Committee, who is required to have regard to the particular circumstances of the doctor's practice. No doctor working single-handed may have more than 3000 persons on his list, the maximum has been fixed in a large number of areas at 2000 to 2500, and the average number per doctor is approximately 1000.

Nurses' Registration Rules.

Lieut.-Colonel Sir JOHN HOPE asked the Minister of Health whether, under the rules for registration of nurses now lying upon the table of the House, a nurse who had been trained in Scotland and was practising in Scotland could be admitted to the English Register, and thereby remove herself entirely from the jurisdiction of the Council of the country in which she was practising; and whether he would consider the amendment of both the English and Scottish rules so that all nurses should originally register in the country in which they were practising, but should be able to be placed on the Register of the other country without difficulty or payment if they subsequently desired to practise in that other counrty.—Sir A. MOND replied: I am advised that it is not competent to the General Nursing Council to refuse to admit to the Register a nurse who is otherwise qualified on the ground that she is not practising in the country. Registration is purely voluntary, and no nurse can be brought within the jurisdiction of any of the three Nursing Councils except by her own choice. A nurse practising in Scotland would derive no advantage from admission to the English Register, since she would not thereby be entitled to describe herself in Scotland as a registered nurse.

Small-pox in Madras.

Mr. WATERSON asked the Secretary for India whether his attention had been drawn to the exceptionally heavy epidemic of small-pox which occurred in the Madras Presidency during the years 1917, 1918, and 1919, when the deaths were 34,958, 58,752, and 41,732, respectively, the number in 1918 representing nearly two-thirds of the total number of deaths from small-pox in British India; and whether any special investigation had been made of the causes of the epidemic and of the failure of vaccination to prevent it, particularly in view of the fact that vaccination was compulsory in all the municipalities, and in 193 villages and 70 ranges of the Presidency.—Mr. MONTAGU replied: I have seen reports containing these figures. The heavy mortality is attributed to laxity in enforcing vaccination and especially re-vaccination, and to inadequate scrutiny of the results. A reorganisation of the vaccination staffs in Madras was sanctioned in 1918, and is probably now in working order. I would add that sanitation is a transferred subject under the new Indian Constitution—i.e., that it is no longer under my control.

THURSDAY, AUGUST 11TH.

Pensioners' Deaths.

Mr. TYSON WILSON asked the Minister of Pensions the number of persons who, having been granted pensions owing to injuries or disease caused by the late war, had died since the pension was granted them.—Mr. MACPHERSON replied: The approximate numbers are, I regret to say, officers 1150, and other ranks 45,000.

Lady Superintendents at Holloway Prison.

Viscountess ASTOR asked the Secretary for the Home Department whether the lady superintendents recently appointed in Holloway prison possessed medical or nursing qualifications; if not, what other qualifications they possessed; and what were their duties and powers.—Mr. SHORTT replied: One of these ladies is a highly qualified nurse, who has had much experience in charge of outside hospitals. She has the supervision of all the hospital work of the prison and of the hospital staff, subject to the control of the medical officers and the Governor, who is a medical man. The other has had great experience as a prison officer, and has the supervision of the disciplinary side of the prison with its staff, subject to the control of the Governor.

Dangerous Drugs Regulations.

Mr. GILBERT asked the Secretary for the Home Department whether the regulations under the Dangerous Drugs Act, 1920, had been officially confirmed and were now in operation; and what other powers had passed legislation in accord with the Opium Convention of 1912, so as to secure coöperation in regard to the import and export of the dangerous drugs named in the Act.—Mr. SHORTT replied: The Regulations have been made and will come into force on Sept. 1st. I cannot say definitely what other powers have passed legislation to carry out the Convention of 1912, but the powers which were signatory to the Treaties of Peace undertook to enact the necessary legislation without delay and at latest within 12 months from the Treaties coming into force. I understand that full information as to the position in each country is being collected by the League of Nations, which is entrusted with the general supervision over the execution of the Opium Convention.

MONDAY, AUGUST 15TH.

New Taxation of Motor Vehicles.

Sir HARRY BRITTAIN asked the Minister of Transport whether, seeing that six months had passed since the new form of taxation for motor vehicles was introduced, he was now able to give the House some information as to the methods in which the large sum of money obtained was being used in the development and improvement of the roads and for other purposes.—Mr. A. NEAL (Parliamentary Secretary to the Ministry of Transport) replied: The greater part of the net yield of the new taxation is being applied in grants under the classification scheme whereby local authorities receive contributions towards their approved expenditure on roads ranking as first and second class. Local authorities were advised that a balance would be available for the purpose of various improvements, and they were invited to submit such schemes by the end of July last. These schemes are now under examination.

Disabled Naval Men in Hospital.

Mr. ANEURIN WILLIAMS asked the Parliamentary Secretary of the Admiralty how many naval men were still in hospital suffering from disabilities due to the war.—Mr. AMERY replied: The number of serving naval men who are suffering from disabilities due to the war and still under treatment in hospital is 18. In addition, there are five naval men in naval hospitals who have been discharged from the Navy and are in receipt of pensions from the Ministry of Pensions. There are also 113 naval men under treatment in Royal Naval Hospital, Great Yarmouth, suffering from disabilities due to the war. This does not include naval men still being treated under Ministry of Pensions in hospitals other than naval.

TUESDAY, AUGUST 16TH.

Ex-Service Men in Hospital.

Mr. ANEURIN WILLIAMS asked the Minister of Pensions how many ex-Service men were still in hospital suffering from disabilities arising from or aggravated by service in the war.—Major TRYON replied: The number of ex-Service men at present receiving in-patient treatment from this Ministry for disabilities due to or aggravated by service in the Great War is approximately 34,000. This figure includes 2600 men undergoing concurrent treatment and training.

Business Committee and Medical Services.

Lieut.-Colonel FREMANTLE asked the Chancellor of the Exchequer if the advisory business-men's committee would consider the waste incurred in the maintenance under 12 Government departments of separate public medical and nursing services with separate institutions and personnel, separate means of recruitment, separate purchase of stores and equipment, often overlapping, often in peace-time redundant, to meet needs which to a large extent were the same, and on active service were often discharged by mutual assistance; and whether in any such consideration they would be assisted by persons having direct experience of such services.—Mr. HILTON YOUNG (Financial Secretary to the Treasury) replied: Pending detailed examination of the departmental replies to the Treasury circular of May 13th last, it would be premature for me to express an opinion with regard to the alleged duplication of machinery, but the matter will be carefully investigated.

THE Great Northern Central Hospital, Holloway, has received from King Edward's Hospital Fund a grant of £1550 for the new Nurses' Home and other extensions from the final distribution of surplus Red Cross funds.

Medical News.

JOINT COUNCIL OF THE ORDER OF ST. JOHN AND THE BRITISH RED CROSS.—The first report of the Joint Council of the Order of St. John of Jerusalem in England and the British Red Cross Society, covering the period from Sept. 4th, 1919, to March 31st, 1921, and including a statement of accounts, has just been issued. The departmental reports cover the subjects of the auxiliary hospital for officers, the central work rooms, the Emergency Help Committee, the Home Service Ambulance Committee (with map), the Hospital Services, the Joint V.A.D. Central Committee and V.A.D. Scholarship Department, the Museums Subcommittee, the Trained Nurses, and the departments dealing with organisation and appeals, personnel and medals, provisional limbs, and stores. Three appendices contain the Hospital Library report, the scheme of the County Joint Committee organisations, and a memorandum for use in the establishment of Medical Supply Depôts.

A Conference on Economic Recovery and World Peace, organised by the Fight the Famine Council for Economic Reconstruction and the Peace Society, will be held in the Caxton Hall, Westminster, from Oct. 11th to 14th.

THE Voluntary Hospitals Commission continue to receive numerous applications from individual hospitals and, to avoid misunderstanding, they are anxious to make it known that grants will only be made on the recommendation in London of King Edward's Fund, or in the provinces of the local Voluntary Hospitals Committees. Steps are now being taken in coöperation with county and county borough councils to establish these local Committees, and any inquiry as to whether a Committee has already been appointed for a particular area should be addressed to the clerk to the county council. Hospitals are asked to defer their applications until the local Hospitals Committee has been appointed.

WEST INDIAN MEDICAL CONFERENCE.—The first of what may well prove to be a series of helpful hygienic conferences was held last month at Demerara, British Guiana, the Administrator, Hon. C. Clementi, presiding. Prof. R. T. Leiper and Dr. J. Anderson attended on behalf of the Filariasis Commission of the London School of Tropical Medicine; Dr. E. P. Minett, Government medical officer of health, acted as secretary, and a number of medical delegates were present from Trinidad, Barbados, St. Lucia, Jamaica, Surinam, Grenada, and elsewhere. In his opening address the Administrator emphasised the sanitary difficulties of the only area yet colonised in British Guiana, which he described as a partially reclaimed swamp some four feet below the level of high spring tides.

THE PEOPLE'S LEAGUE OF HEALTH.—The first Travelling Scholarship Prize awarded by the People's League of Health has been won by Mrs. M. C. D. Walters, C.M.B., M.R.San.I. The award is in connexion with the Sims Woodhead series of constructive educational health lectures delivered during the spring at Morley Hall, George-street, Hanover-square, by the League. Mrs. Walters, who during the war worked in the maternity hostels for Belgian women, is shortly to visit Belgium, and will spend a week in Brussels, where arrangements have been made for her to inspect the health centres of the city, upon which she will report to the League. The second course of the Sims Woodhead Lectures will commence in October. The fee is 10s. for the course, and 5s. entrance fee for the examination with which the Travelling Scholarship Prize is connected. Applications should be made to Hon. Organiser, the People's League of Health, 7, Hanover-square, London, W. 1.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.—A special post-graduate course will be held at the Prince of Wales's General Hospital, Tottenham, N., from Sept. 26th to Oct. 8th. It will include practical demonstration on clinical and laboratory methods each morning, demonstrations on groups of selected cases, general hospital work, and a clinical lecture each afternoon. Lectures will be given by Mr. C. J. Bond, of Leicester, on "Latent Infections"; Mr. James Berry on "The Diagnosis of Thyroid Swellings"; Colonel L. W. Harrison on "The Routine Treatment of Syphilis and Tests of Cure in Gonorrhœa and Syphilis"; Colonel W. Byam on "The Invalid from the Tropics"; Dr. Arthur Giles on "Sterility"; Mr. H. D. Gillies on "Plastic Surgery"; and Sir W. H. Willcox on "Diabetes." Practical demonstrations will also be given in associated special hospitals. Luncheon will be obtainable in the neighbourhood and tea will be provided each day in the hospital. A syllabus will be issued in due course, and further information may be obtained from the Dean.

THE Wellcome Historical Medical Museum will be closed for cleaning and decorating during the month of September.

Dr. H. E. Cuff, who lost his life on the Norfolk coast on August 15th in an unsuccessful attempt to rescue two daughters from drowning, was principal medical officer to the Metropolitan Asylums Board and author of books on nursing.

ESSEX COUNTY TUBERCULOSIS SCHEME.—Conferences between representatives of the Essex Local Medical and Panel Committees, the Essex Insurance Committee, and the Essex County Council, with a view to securing closer coöperation between the general practitioner and the tuberculosis officer in combating tuberculosis, have resulted in an amended scheme which comes into force on Oct. 1st. This scheme, which has received the approval of the Ministry of Health, aims at making the dispensary a consulting centre and not a centre for symptomatic treatment. This being so, the local medical and panel committees have undertaken to act in full coöperation with the tuberculosis officer in carrying out the revised scheme, and to do their utmost to prevail upon other members of the profession to do likewise. The need is recognised for strong support from various sections of the public if the care and treatment of tuberculous cases are to be really effective. To grapple with the factors of environment, food, nature of work, wages, and the ever-present responsibilities of dependants, Care Associations have been established in certain districts, and will be extended when opportunity affords. A circular issued by the chief tuberculosis officer to all medical practitioners in the county gives a convenient summary of existing facilities.

TRAINING OF NURSES AT LEEDS.—Reference was recently made in these columns to the proposed diploma in nursing at the University of Leeds; for many years the question of training in nursing at the Union Infirmaries of the city and of some of the surrounding districts has also engaged the attention of the authorities. At the Union Infirmary in Beckett-street Dr. James Allan, who has held the post of medical superintendent for about 40 years, has always regarded it as a part of his duty to instruct the nurses, and some 25 years ago he systematised his courses of instruction; the independent medical man who acts as examiner has just presented his twenty-sixth annual report to the guardians. He describes the general education of the candidates as of a satisfactory character; their knowledge has been sound, and in some cases has attained to a really high standard. The latest examination was conducted by means of written questions, together with a separate viva voce examination of each candidate in the presence of the medical superintendent and of the matron. Of late years the number of candidates has sometimes reached 30; the total number who have presented themselves for examination during the operation of the scheme is 455. The Hunslet guardians and the Barnsley guardians have made use of the same scheme for some years, with the assistance of the same examiner, who has also acted for the Fever Nurses' Association in respect of the City Hospital at Seacroft. There is no doubt that the standard of knowledge and the character of the nursing have improved under these conditions.

COUNTY HEALTH REFORM IN IRELAND.—An Irish correspondent writes: For some months past there have been movements in several Irish counties to bring about a unification of county health services. The county council has in each case been acting in isolation from the Local Government Board and in harmony with the local government department of Dail Earann. Last week the county council of County Clare published the details of a careful scheme which appears to be based mainly on the proposals put forward in the report of the Irish Public Health Council. The scheme recommends that the county be a unit, with a portion of Limerick incorporated, and that all public health services be coördinated and administered by a single body, to be known as the County Board of Health, with authority over the medical staff, nursing staff and health inspectors, and having control of home assistance. The Board of Health will consist of 30 members—county councillors, chairman of rural and urban councils, members nominated by the county council, representatives of the county insurance committee and of the county medical association. The report provides for five public health institutions—viz., a mental hospital, a county central home (Ennis workhouse) for aged and chronic hospital cases and the harmless insane with a detached portion for tuberculosis cases, a county nursery, four district hospitals, and an inter-county sanatorium. The scheme is, no doubt, good in itself, but one feels that it would be wiser to wait until some legislative body is in a position to deal with the health services of Ireland as a whole.

Sir StClair Thomson has had conferred on him the Order of Chevalier de la Légion d'Honneur for services rendered in France with the Croix Rouge Française during the war.

CARE OF FEMALE MENTAL DEFECTIVES AT HULL.—On August 5th Tilworth Grange, in the parish of Sutton-in-Holderness, was formally opened by the Lady Mayoress of Hull as an institution for the care of female mental defectives. The property was acquired at a cost of £9000, and consists of a large house with numerous out-buildings, and an estate of 21 acres. Half the sum named (which includes expenditure on alterations and equipment) will be met by the Board of Control. There is accommodation for 50 patients of all grades; the staff includes a female gardener who will instruct the patients in gardening.

Appointments.

DUNDAS-GRANT, Sir JAMES, M.D., has been appointed Consulting Laryngologist to the Cancer Hospital, Fulham.

PERKINS, R. J., M.B., B.S. Lond., Physician to Out-patients' Department of the Royal Waterloo Hospital.

ROBERTS, C. S. LANE, M.S. Lond., F.R.C.S. Eng., University Tutor in Obstetrics and Resident Medical Officer, Maternity Hospital, Leeds.

TOPALIA, H. A., L.R.C.P. & S. Edin., L.R.F.P. & S. Glasg., Assistant Medical Officer to the Swaffield-road Institution and Intermediate Schools, Wandsworth Union.

Vacancies.

For further information refer to the advertisement columns.

Aberdeen Royal Infirmary.—Jun. M.O. £500.
Aylesbury, Royal Bucks Hospital.—H.S. £200.
Bath, Royal Mineral Water Hospital.—Res. M.O. £250.
Bedford County Hospital.—Asst. H.S. £150.
Belgrave Hospital for Children, Clapham-road, S.W.—Female H.P. H.S. Each £100.
Birmingham Children's Hospital.—Res. M.O. £150.
Birmingham General Hospital.—Res. Anæsthetist. Obst. H.S. H.S. Each £100. H.S.'s to Spec. Depts. £125. Res. Surg. Officer. £180.
Birmingham University.—Lecturer in Physiological Dept. £300.
Bournemouth, Royal Victoria and West Hants Hospital.—Two Res. M.O.'s. Each £200.
Bradford, Royal Eye and Ear Hospital.—Hon. Asst. Ophth. Surg.
Brighton, Royal Sussex County Hospital.—H.S. £120.
Coventry, Coventry and Warwickshire Hospital.—Res. H.P. £250.
Derby, Derbyshire Hospital for Sick Children.—Female Res. M.O. £150.
Dreadnought Hospital, Greenwich, S.E.—H.P. H.S. Each £200.
Evelina Hospital for Children, Southwark, S.E.—H.P. H.S. Each £160.
Exminster, Devon Mental Hospital.—Locum Tenens. £7 7*s.* per week.
General Lying-in Hospital, York-road, Lambeth, S.E.—Res. M.O. £100.
Glamorgan County Asylum, Bridgend.—Jun. Asst. M.O. £415.
Gravesend Hospital.—H.S. £200.
Halifax County Borough.—M.O.H. £900.
Hull Royal Infirmary.—V.D. and Cas. O. £250. Asst. H.S. £150.
Ipswich County Borough.—Asst. M.O.H. £500.
Leeds Public Dispensary.—Sen. Res. M.O. £250.
Liverpool, Royal Southern Hospital.—Surg. Tutor and Registrar. £20. Second M.O. to V.D. Dept. £200. Two H.P.'s. Three H.S.'s. Each £100.
London Lock Hospital, 91, Dean-street, Soho, W.—H.S. £200.
London University.—Readership in Pathological Chemistry. £700.
Manchester Ear Hospital.—H.S.
Manchester Royal Eye Hospital.—Jun. H.S. £120.
Metropolitan Hospital, Kingsland-road, E.—Surg. for Diseases of Nose and Throat.
Mildmay Mission Hospital, Austin-street, Bethnal Green, London, E.—Jun. Res. M.O. £120.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Res. Cas. O. £200.
Newcastle-upon-Tyne, University of Durham College of Medicine.—Prof. of Physiology. £1000.
Northamptonshire Sanatorium, Creaton.—Res. Med. Supt. £500.
Norwich, Norfolk and Norwich Hospital.—Fourth H.S. £200.
Nottingham General Hospital.—Two H.S.'s. Each £200.
Poplar Hospital for Accidents, Poplar, E.—Asst. Res. S. £150.
Queen Mary's Hospital for the East End, Stratford, E.—Cas. O. £150.
Rochester, St. Bartholomew's Hospital.—Res. H.S. £250. H.P. £200.
St. Mary's Hospital, Paddington, W.—Cas. Phys. £100.
Salford Royal Hospital.—Cas. H.S. £150.
Sheffield Royal Hospital.—Asst. Cas. O. £150.
Sydney University, New South Wales, Australia.—Chair of Psychiatry. £1100.
Wakefield, Clayton Hospital.—H.S. £225.
West Derby Union.—Asst. Res. M.O. at Walton Institution, Rice-lane. £250.
Worcester County and City Mental Hospital, Powick.—Jun. Asst. M.O. £350.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of the following vacant appointments: Dunkeld (Perth), Somercotes (Lincoln).

Births, Marriages, and Deaths.

BIRTHS.

MELHUISH.—On August 8th, at Grove-road, Wrexham, the wife of Dr. T. W. Melhuish, of a son.

TOOGOOD.—On August 9th, at Liskerret, Liskeard, Cornwall, the wife of Sherman Toogood, M.A. Oxon., M.R.C.S., L.R.C.P., of a daughter.

WALLIS.—On August 13th, at Townshend-road, N.W., the wife of Dr. R. L. Mackenzie Wallis, of a daughter.

MARRIAGES.

BRIGGS—COOPER.—On August 4th, at the Parish Church, Bramhall, Christopher Duffield Briggs, M.R.C.S., of Wigston, Leicester, to Catherine Rosa, widow of J. T. Cooper.

DEATHS.

BULL.—On August 14th, at St. Oswald's House, Stony Stratford, William Henry Bull, Colonel, A.M.S. (T.), K.H.S., V.D., D.L., F.R.C.S. Edin., aged 69.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, August 22nd.—12 noon, Dr. S. Pinchin: Diseases of the Heart. 2 P.M., Mr. MacDonald: Surgical Out-patients. Mr. Simmonds: Visit to Surgical Wards. 4.30 P.M., Lecture:—Dr. Paterson: Deficiency Diseases.

TUESDAY.—2 P.M., Dr. Burrell: Medical Out-patients. Mr. Banks Davis: Diseases of the Throat, Nose and Ear. 2.30 P.M., Mr. Addison: Visit to Surgical Wards. 4.30 P.M., Lecture:—Dr. Burnford: Clinical Medicine (II.).

WEDNESDAY.—10 A.M., Mr. MacDonald: Genito-Urinary Department. 12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen. 2 P.M., Mr. Addison: Operations. Mr. Gibb: Eye Department. 4.30 P.M., Lecture:—Mr. Gibb: Ulceration of the Cornea (II.).

THURSDAY.—11.30 A.M., Obstetrical Registrar: Gynæcological Demonstration. 2 P.M., Dr. S. Pinchin: Medical Out-patients Mr. Simmonds: Orthopædic Department. 4.30 P.M., Lecture:—Mr. Simmonds: Surgical Emergencies (II.).

FRIDAY.—10 A.M., Mr. D. Buxton: Dental Department. 12.15 P.M., Dr. Burnford: Applied Pathology. 2 P.M., Dr. Pernet: Skin Department. 2.30 P.M., Dr. Pritchard: Demonstration of Cases. (Medical Wards.)

SATURDAY.—10 A.M., Dr. Burnford: Visit to Medical Wards. 2 P.M., Mr. Sinclair: Surgical Out-patients.

Daily:—10 A.M., Visit of Post-Graduates to Wards. 2 P.M., In-patient, Out-patient Clinics and Operations.

INDEX TO "THE LANCET," VOL. I., 1921.

THE Index and Title-page to Vol. I., 1921, which was completed with the issue of June 25th, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1 and 2, Bedford-street, Strand, W.C.2.

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SOVIET RUSSIA AND PROSTITUTION.

THE flood of refugees from Russia may not only bring cholera, typhus, or plague with them, but may also accentuate the prevalence of venereal disease. At the Third Congress of the Women's Sections of the Russian Communist Party, Mme. Alexandra Kollontay, one of the leading women of Soviet Russia, made a forcible speech on the subject of prostitution. A first edition of 40,000 copies of this speech was at once printed and widely circulated. It was then translated, and a first instalment is published in the August number of *Soviet Russia*, the New York organ of the Bolshevist party. From this it appears that the Bolshevist Council of the People's Commissars, when it came into power, at once abolished all Tsarist legislation on prostitution; but no other measures have been substituted. Certain localities have, however, acted on their own initiative and without interference from the central Government. In one town disorderly houses are totally closed, while in another they are allowed openly to exist. In some districts prostitutes have been rigorously suppressed, sometimes even with the aid of the militia, and treated as criminals, while in other places they are not molested at all. The speaker expressed regret at the lack of popular fundamental principles on the question, and proceeded to define the meaning of prostitution in the terms of Bolshevism. It was "a phenomenon closely bound up with an income not earned by labour; it therefore flourished in the epoch of the rule of capitalism and private property." Soviet Russia consequently must abolish prostitution because it is a survival of the principle of private property; but, above all, because by selling herself, even if only temporarily, the prostitute "becomes a *deserter from work*." Because prostitutes do not contribute their share of productive social work they must be "mercilessly condemned."

Regard for public health only entered the question as a secondary consideration, but it was by no means overlooked. The speaker recognised that prostitution is one cause, but in no sense the only cause, of venereal disease. Defective hygiene, scarcity of plates, cups, towels, &c., frequently give rise to infection.

An Insight into Conditions in the War Areas.

Mme. Kollontay proceeded to paint an alarming picture of the spread of venereal disease in Russia, apart from prostitution; for instance, in the fruitful southern provinces, where civil war has been in progress, the male Cossack population has been driven out with the Whites, or has been scattered to the winds. Only women remained in the settlements; they had enough of everything, but there were no men. Red armies advanced and took the towns, the men were billeted out, and remained for weeks at a time. Free alliances resulted, having no similarity whatever with prostitution, since the women voluntarily associated with the men with no view to material gain; indeed the gain was on the other side, the women taking care of the Red soldiers, mending their clothes and giving them homes so long as the army remained in the settlement. In this way the settlements became infected with venereal disease. The same thing was repeated with cities and villages, which were taken by the Whites. A general contamination is constantly going on. The diseases are increasing and threaten to wipe out the entire unborn population.

Suggested Preventive Measures.

To combat this danger Mme. Kollontay urged the provision of a proper sexual education for the young, so that children might enter life armed with precise information. Then she continued to plead that the most precious moral weapon the worker could possess was the feeling of comradeship and solidarity between the sexes. The possible purchase of a woman must degrade such feeling; therefore, "from the standpoint of the new Communist morality which is in process of formation, of crystallisation, prostitution is intolerable and dangerous."

Meanwhile there is a steady increase of prostitution and its attendant diseases. It is to be hoped that, as Mme. Kollontay possesses great influence in Soviet Russia, the further instalment of her speech will suggest some practical measures calculated to be of immediate service.

PUBLIC HEALTH IN ASSAM: (1) KALA-AZAR; (2) VACCINATION.

IN continuation of his report on Sanitary Matters in Assam, noticed in these columns on Nov. 27th, 1920, Major T. McCombie Young, I.M.S., Sanitary Commissioner, has issued an interesting account of the measures undertaken for dealing with the serious epidemic of kala-azar in that province during 1919. The main principle has been, where circumstances rendered it practicable, to send subassistant surgeons on survey every year through any endemic area to observe the general activity of the disease, and to discover any individual villages in which hyper-endemic conditions may have appeared. In such cases the village is notified as an infected area and its inhabitants are removed, each family being classified as infected, contact, or free, and located in each group on separate sites: a subassistant surgeon is posted to treat the sick and to supervise the working of preventive regulations. In the Sibsagar district an attempt was made to discover and deal with every village in which even a single case of kala-azar existed, and experience indicates that had a clean sweep been made in the whole area in 1917 the outbreak might have been terminated earlier, "at the same outlay, but with considerable economy in the lives of persons who would have escaped the disease." The reality of site infection is considered to have been proved, and the only known remedy is evacuation. If the bed-bug is the carrier "we still want to know under what conditions in nature it becomes infective, and how it travels from village to village to originate new foci of infection."

The report on Vaccination in this province (also by Major Young) for the triennial period, 1917–18 to 1919–20, shows the considerable increase of 81,297 operations, as compared with those of the preceding three years, but this was almost entirely due to the inclusion of the Manipur State in the provincial statistics. The ratio of successful vaccinations to the total population rose from 43·74 per 1000 in 1917–18 to 52·97 in 1919–20; for which years the small-pox mortality fell from 0·59 to 0·20 per 1000. The lymph supplied from the vaccine depôt at Shillong was of excellent quality, the percentage of success being 95·71 in primary operations and 72·04 in revaccinations: glycerinated lymph only is used.

MENTAL HOSPITALS IN SCOTLAND: ANNUAL REPORT OF THE BOARD OF CONTROL.

THE General Board of Control for Scotland have published their seventh annual report on the condition and management of lunatic asylums and on the protection and control of mental defectives in Scotland. On Jan. 1st, 1921, there were in Scotland 17,806 insane persons (exclusive of insane persons maintained at home by their natural guardians) of whom the Board of Control had official cognisance; this number, which showed an increase of 226 on that of the previous year, included the inmates of training schools for imbecile children not certified under the Mental Deficiency Act, and inmates of the criminal lunatic department of Perth Prison. Of this total, 2984 were maintained from private sources, 14,752 by parochial rates, and 70 at the expense of the State. With reference to registered lunatics, there was a total increase of 233 (38 private patients, 195 pauper patients) on the previous year's figures, owing to an increase of the number in establishments by 347 and a decrease of the number in private dwellings by 114.

Admissions, Discharges, &c.

The total number of patients admitted to establishments under a sheriff's order, sanction of the Board, and other statutory authority, was 3873 (164 more than in 1919); this figure excludes admissions by transfer, of which there were 706, a high number explained by the reconversion of Renfrew District Asylum from a temporary war hospital. Of voluntary patients 313 were admitted to asylums in 1920. Discharges were as follows: 358 private patients, 970 pauper patients, discharged recovered; 221 private patients, 341 pauper patients, discharged unrecovered, all these figures being higher than in the preceding year. Deaths occurred of 284 private patients and 1262 pauper patients, the combined death-rate for patients in establishments being 10·1, as compared with 12·1 in 1919. The total reported number of accidents to patients was 103, 18 being fatal, of which 9 were suicides; cases of attempted suicide numbered 7.

Present Condition of Establishments.—Lunatics in Private Dwellings.

Establishments for the insane in Scotland comprise: (*a*) royal and district; (*b*) private and (*c*) parochial asylums; (*d*) lunatic wards of poorhouses; and (*e*) the department for criminal or State patients in Perth Prison. On account of the abnormal conditions now existing many difficulties have to be faced in connexion with the administration of institutions, a large percentage of inmates of which are hospital cases. Favourable comment is, however, made on the fact that, while economy is most carefully kept in view, the dietary is ample and varied. As a general rule, the management of these establishments reflects credit upon the officials, and almost without exception a satisfactory standard of efficiency would appear to be maintained. Similarly, favourable reports are given of the administration of the establishments for mental defectives.

Of the 94 private patients provided for in private dwellings, with the sanction of the Board, on Jan. 1st, 1921, there were 32 in houses possessing special licences for the reception of not more than 4 patients, and 62 in houses which, having only one patient, required no licence. All pauper patients, wherever placed, come upon the register of the Board; the number provided for in private dwellings on the above date was 2030. All lunatics and mental defectives were visited by officers of the Board, many receiving two visits during the year. The standard of care continues to be satisfactory.

Suggested Reforms.

A reform in terminology is strongly urged in the report: the Board are of the opinion that the terms "lunacy" and "lunatic" should be abolished, and that for the designation "asylum" should be substituted that of "mental hospital"; this change, the Board are convinced, would be welcomed by the great majority of those concerned with the administration of institutions for the insane, and they regret the necessity of their own employment of the statutory terminology in the report. Furthermore, about 80 per cent. of the pauper patients in Scottish asylums do not come from the pauper class and would not have become paupers except for the incidence of insanity; the injustice of the designation leads the Board to advocate its avoidance in future legislation on the subject. In the light of the success which has attended the establishment in 1890 by the Glasgow Parish Council of observation wards for patients with incipient forms of mental disease, it is recommended in the report that legislation be framed for legalising these clinics, for establishing them in suitable centres, with at least one in connexion with every medical school, for their use by all classes of the community which require them, and for their support by local authorities. The Board have reason to believe that the provisions relating to the six months' certificate are widely disregarded—i.e., that the cases of patients resident for more than six months in private dwellings and requiring compulsory restraint of some kind are not brought to the notice of the Board, the members of which body now consider that houses used for the purpose should be sanctioned and approved by them, and all names of patients sent to them. The terms of admission of voluntary patients are stated to require substantial amendment. In some of the larger asylums nearly 50 per cent. of all private patients paying higher rates of board are admitted as voluntary inmates; many of them being obviously insane, their reception is a contravention of the terms of the statute. Further, a certain number have, in course of time, to be certified and remain as certified patients in the asylum. It is suggested that the statute be amended to secure more effective restriction of the employment of this section to those persons whom it was designed to benefit, as well as a periodic review of the mental condition of all voluntary inmates in asylums; otherwise there appears to be no alternative except to reconsider the present basis of the medical certification of the insane. As the law now stands there is no provision for any but the more wealthy class of patients submitting themselves for treatment as voluntary patients. It is recommended that persons unable to pay for their own maintenance in asylums, and suitable for voluntary treatment, should be provided for in this respect by the local authority as if they were certified patients. With reference to pathological laboratories, the economical advantages of the central laboratories is emphasised, and it is stated that there is no necessity to appoint an assistant medical officer as pathologist to any individual asylum.

Expenditure on Pauper Lunatics.

The expenditure of local authorities on the maintenance of pauper lunatics for the year ending May 15th, 1920, was as follows:—For maintenance and other expenses of 17,481 pauper lunatics under care for longer or shorter periods during the year, in asylums, lunatic wards of poorhouses, and private dwellings, a total sum of £617,800 was paid. Of this expenditure £38,113 was repaid by relatives and others, and £115,703 was contributed from the local taxation account. The net expenditure by local authorities on the maintenance of patients was thus £463,984, which is £54,129 more than the expenditure of last year. As regards asylums, the average cost per head is 16*s.* 8*d.* weekly, or £43 6*s.* 8*d.* per annum; in licensed wards of poorhouses the cost is 15*s.* 11*d.* weekly, or £41 7*s.* 8*d.* per annum; as regards private dwellings, the average cost is 10*s.* 10*d.* weekly, or £28 3*s.* 4*d.* per annum.

HOME LABOUR AND INSANITY.

A CORRESPONDENT writes: There are 42 males and 80 females in the Haywards Heath Mental Hospital chargeable to the parish of Eastbourne, and the fact that there are nearly twice as many females as males has led to an interesting suggestion by the members of the asylum visiting committee of the board of guardians. In their report presented to the guardians on August 12th, the committee state that there was little doubt that the stress and strain of the endeavour of many women to run their home establishments are so heavy and troublesome that they succumb. "This," the report continues, "is a point which should be carefully considered by the Women's Institutes, as it is having a very great effect on the social life of the people. Search for all labour-saving devices must be continued and every endeavour made to induce children to think less of their own comfort and offer their help and assistance to the mothers or housekeepers of the family circle." The committee on the occasion of their visit found not one of the 42 males in bed, most of the latter being cases of a chronic character.

THE NEEDS OF KING'S COLLEGE HOSPITAL.

King's College Hospital is faced with a debt of some £100,000, and as a consequence half the 388 beds ordinarily placed at the disposal of the sick poor of South London and surrounding districts have been closed. The committee of management in the special effort which they have been making to arouse greater interest in the hospital and its work with a view to raising, not only sufficient funds to liquidate the debt but to enable them to reopen seven closed wards, have been greatly assisted by a gift of eight Roneo duplicators, to be used in the printing of letters of appeal and other printed matter, thereby saving the hospital a considerable sum. It is hoped that this gift from Messrs. Roneo may be an incentive to other firms to offer gifts either in money or in kind.

OPERATION FOR RHINOPHYMA.

IN the *Scalpel* for July 30th Dr. Fallas, of Brussels, describes three cases of rhinophyma in each of which he was able to restore to the patient his former normal appearance. The instructive element in his paper is the advantage he has found in the use of the thermo-cautery instead of the knife. In the first case, indeed, he began by a cutting operation, but was compelled to resort to the cautery on account of excessive bleeding. A necrosis of the right ala nasi in this case called for a subsequent plastic operation. In the remaining two cases Dr. Fallas used the thermo-cautery only. The operations were bloodless and if one may judge from the photographs published they were also completely successful. No grafting was found to be necessary.

"ERSATZ" LEATHER.

AN action in the German courts is to be noted in which damages were recovered against a German hatter by one of his customers, who had suffered from pain in his head after wearing one of the defendant's hats for a short time. His symptoms, whatever they may have been, were ascribed by the evidence to the composition of the band of the hat which was of artificial leather, or leather substitute, into the composition of which sulphuric acid entered. The court held that the hatter was bound to discover whether his goods were likely to be injurious to his customers; in other words, that he warranted them fit for their intended use. British importers of goods of this kind will no doubt accept the case as a warning to be careful as to the nature of the material purchased.

REST AND HELP FOR HOSPITAL NURSES.

To the Editor of THE LANCET.

SIR,—In your kindness you have allowed me to appeal for years past for contributions towards the Necessitous Ladies' Holiday and General Fund, and I venture once again to ask the charity of your readers, for whose generosity in the past I could never be grateful enough. The poor ladies are suffering pitifully now through the difficulty of obtaining work. Hospital nurses who have broken down, journalists, musicians, artists, actresses, discharged government clerks, and companions, many of whom, through age and infirmity, unable to obtain any sort of work, are left behind in the city in the summer months, exposed to the privations attendant on poverty.

The Fund also supplies food, medicine, and clothing, and comforts that are even more urgently needed than rest or change of air. Faced with the high cost of living on their tiny incomes, many are in daily anxiety.

I plead, then, for the old, the sick, and helpless. All contributions sent to the following address will be gratefully acknowledged and distributed among hospital nurses who have broken down.—I am, Sir, yours faithfully,

CONSTANCE BEERBOHM (Miss),
40, Upper Berkeley-street, London, W. 1. Treasurer.

Mr. Alexander Gray, M.A., head of the Approved Society Branch of the Insurance Department, Ministry of Health, has been appointed to the new Jaffrey Chair of Political Economy at the University of Aberdeen.